

# American Vegetable Grower

FEBRUARY • 1957



Top-notch Growers Feed  
Their Plants a Balanced Diet

Winter's Wonder—  
A Plastic Greenhouse

Vegetable Areas of America—  
California's Central Valley

How to Use

**STARTER SOLUTIONS**

See page 13



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Firestone Factory-Method NEW TREAD!*

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Firestone New Treads mean just what they say. They're new . . . brand new. Your Firestone Farm Tire Specialist can put them on most worn down tire bodies to make them bite down exactly as they did the day you bought them.

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Get better stands, yields, quality and profits with  
potatoes, tomatoes, peppers

# Agri-mycin\*100

- Antibiotic seed-piece dip for potatoes
- Spray for vegetable crops

**Blackleg and Soft Rot controlled**

**Yields increased up to 72 bu. per acre**

## ECONOMICAL, FULLY COMPATIBLE WITH MOST STANDARD FUNGICIDES

Agri-mycin is the one antibiotic plant spray that gives you two-way crop protection—two-way benefits. Not only does it control some of the most stubborn and destructive bacterial plant diseases—it promotes healthy, vigorous plants, thus increasing yields. Universities and commercial growers have reported up to 72 bushels per acre increase in potato crop—10,000 lb. per acre increase in tomato yield with Agri-mycin. Crop is of a better quality, brings a better price. Agri-mycin is fully compatible and should be used with fungicides such as Sperguson, Phygon, Captan, Nabam, Ferbam.

It is recommended for use in combination fungicide-antibiotic potato seed-piece dip treatments for combined control of both bacterial and fungal diseases. Agri-mycin 100, the only spray containing both streptomycin and Terramycin\* is now available from your regular supplier of spray materials.



**Only 1 peck of rots in 10,000 lbs. potatoes**

Chas. Blackman, commercial potato grower of Clark, S. D., reports that Agri-mycin kept his field free from disease even though fields across the road were severely blighted. He says that Agri-mycin has also eliminated soft rot in potatoes stored in pits over winter.



**Vegetable growers!**

Write for information on use of Agri-mycin  
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9.34-oz. jar makes up to 330 gallons  
of spray or dip. Save over 20%, buy  
it in the economical 25-lb. drum.

Pat. Pending

\*Terramycin Brand of Oxytetracycline

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Please send me the name of my nearest distributor or dealer  
and additional information on Agri-mycin.

Name \_\_\_\_\_

Address or Rural Route \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

Vegetable crop \_\_\_\_\_ No. of acres raised \_\_\_\_\_



*Here's how you can get more water  
for FAR LESS PER ACRE FOOT!*



Why Transite is your best protection against costly leakage—the patented Ring-Tite® coupling! Cutaway view shows rubber rings compressed and locked in grooves to provide a lasting, watertight seal. With all its tightness Ring-Tite joints are quickly, easily assembled to save time and expense of installation!

## ...install Transite underground feeder mains!

With Transite® irrigation pipe, look for substantial savings in planning your system, in installing it and in operating it through the years.

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For further information on Transite, use the coupon below. Mail it now! There's no obligation, of course.

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## AMERICAN VEGETABLE GROWER

REG. U. S. PAT. OFF.

(Commercial Vegetable Grower)

Vol. 5 February, 1957 No. 2

### FEATURED IN THIS ISSUE

Transplanting pepper plants with an Allis-Chalmers Model G rear-engine tractor on the farm of C. K. Makino, Dallasport, Wash. The planting attachment makes the job easy for Makino, on tractor seat, and two men who place the plants.

Winter Wonder . . . . . 11

By Raymond Sheldrake, Jr.

Soon You'll Really Grow Tall Plants . . 12

By S. H. Wittwer and M. J. Bukovac

Have You Tried Starter Solutions? . . 13

By Charles B. Sayre

Their Plants Thrive on a

Balanced Diet . . . . . 14

By Eldon S. Banta

The Vegetable Areas of America—

California's Central Valley . . . . . 16

By John C. Lingle

His Choice: Russet Burbank . . . . . 20

By John A. Schoenemann

Double Action . . . . . 24

By Harold and Lillie Larsen

Do You Know the pH of Your Soil? . . 26

By Earl F. Downey

How to Fertilize Greenhouse Soils . . 30

By G. F. Warren

Two Tons More an Acre . . . . . 48

By Harry Ransdell

### DEPARTMENTS

Letters to the Editor . . . . . 6

State News . . . . . 18

Answering Your Questions . . . . . 28

Calendar of Coming Meetings

and Exhibits . . . . . 36

NJVG Page . . . . . 38

Know Your Vegetable Seeds . . . . . 40

New for You . . . . . 52

Editorials . . . . . 54

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AMERICAN VEGETABLE GROWER



**THIS ISSUE**

...nts with an Allis-Chalmers tractor on the farm in Port, Wash. The planting is easy for Makino, on who place the plants. ....11  
 ...ake, Jr. ....12  
 ...row Tall Plants. ....12  
 ...nd M. J. Bukovac ....13  
 ...ter Solutions? ....13  
 ...n a ....14  
 ...of America— ....16  
 ...l Valley ....16  
 ...rbank. ....20  
 ...mann ....24  
 ...Larsen ....26  
 ...of Your Soil? ....26  
 ...enhouse Soils. ....30  
 ...ere. ....48  
 ....6  
 ....18  
 ...stions. ....28  
 ...Meetings ....36  
 ....38  
 ...Seeds. ....40  
 ....52  
 ....54

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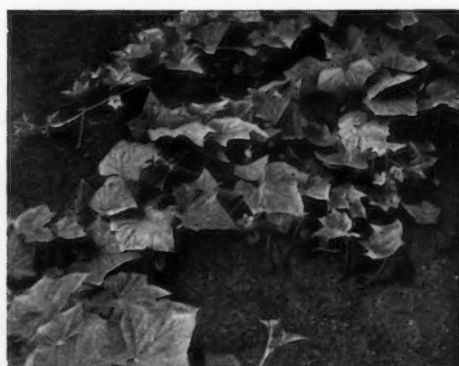
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VEGETABLE GROWER



**Tomato plants** suffering from a magnesium deficiency show yellow areas between dark green veins, starting with lower, older leaves. Withering and dying of leaves increases as fruiting develops.



**Cucumbers:** Edges of leaves turn white, then change to brown, but the veins remain dark green.



**Beans:** Lack of magnesium is shown by characteristic yellowing between the veins together with mottling and browning of older leaves.

# *Your vegetables can tell you...when it's* **TOO LATE FOR TOP-PROFITS!**

Any of your vegetables can tell you when they suffer from an extreme shortage of available magnesium, but don't wait for obvious signs because in some areas magnesium deficiencies are reported on 90% of vegetable farms. Magnesium is a major plant food for vegetables, and the easiest and most effective way to supply magnesium is to use an SPM Premium type complete fertilizer containing Sul-Po-Mag®. SPM fertilizers also contain premium quality Sulphate of Potash obtained from Sul-Po-Mag which reduces the danger of chloride toxicity. Sulphate of Potash in SPM fertilizers helps grow vegetables of earlier, more uniform maturity—rich in color, and of higher quality. Your vegetables get both water-soluble magnesium and sulphate of potash when you apply an SPM Premium type complete fertilizer containing Sul-Po-Mag.



Look for this identifying SPM Seal of Approval when you buy. It's your assurance of extra-value fertilizer.

SPM Premium-type fertilizers guarantee



Water-Soluble Double Sulphate of Potash-Magnesia  
 (K<sub>2</sub>SO<sub>4</sub> • 2MgSO<sub>4</sub>) 22% K<sub>2</sub>O—18% MgO

**potash division**

**INTERNATIONAL MINERALS & CHEMICAL CORPORATION**  
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"Picks upwards  
of one acre per hour,  
when you want, and  
without the  
headaches of hand  
picking labor."



"Cleans the  
beans as clean  
as with hand  
picking."

The improvements made in CRCO's  
1956 Mechanical Bean Picker also  
resulted in satisfactorily picking beans  
from plants that were larger and had  
heavier foliage.

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## LETTERS TO THE EDITOR

### Sweet Corn Plantings

Dear Editor:

Perhaps our experience with sweet corn varieties would be of interest to your readers.

We generally make three plantings of sweet corn, one in mid-April, one in mid-May, and the last around the middle of June or June 25. After much experimenting, we have corn of good quality from July 20 until almost October 1, after which time frost may be expected.

The four kinds we plant at each time are Golden Beauty, Golden Jewell, Golden Seneca, and Belgold, and they come on in that order.

Loveland, Colo. Mr. & Mrs. Ralph Graybill

### Wants Melon Issue

Dear Editor:

I am a new subscriber to AMERICAN VEGETABLE GROWER, having thus far received only two issues. But I wish I had subscribed sooner as I missed the special cantaloupe issue. Is a copy available?

Osceola, Mo. Frank L. Hostetter

We still have a few copies of the special muskmelon issue and are happy to send one to Reader Hostetter.—Ed.

### College Students' Judging Contest

Dear Editor:

The article concerning the college students' judging contest (November, 1956 AMERICAN VEGETABLE GROWER, p. 19) was interesting. The contest will be a worthwhile experience for the participating members.

I think that such a contest could benefit a much larger number of students if good pictures could be taken of each exhibit and the pictures made available for training purposes afterward. The assortment of vegetables, seeds, weeds, and diseases is not an easy job to assemble at one time.

A commercial company or association interested in the vegetable field may be happy to have a film strip made of the contest. As a graduate student at the University of Illinois, I can appreciate the work involved in training a judging team.

Tallahassee, Fla. L. F. Martin

### Cover Crop for Asparagus

Dear Editor:

Asparagus growers should investigate the idea of using oats as a cover crop so as to hold the soil during the winter. The oats could be scattered on the surface just before the last cultivation. Or a special drill could be made (merely a narrow width grain drill) and attached behind the cultivator. This is similar to the method now being used by sweet corn growers to sow cover crops of rye grass.

Asparagus doesn't work to the surface since the crown doesn't grow upward but sideways like iris. What happens is that the surface works down to the asparagus by soil being washed away. Consequently, if the grower holds his soil, his plants will stay as deep as they were planted and will last about 20 years. Oats die during the winter and would be disked in with the asparagus tops in spring.

Califon, N. J. J. A. Eliot

AMERICAN VEGETABLE GROWER

# ERS EDITOR

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L. F. Martin

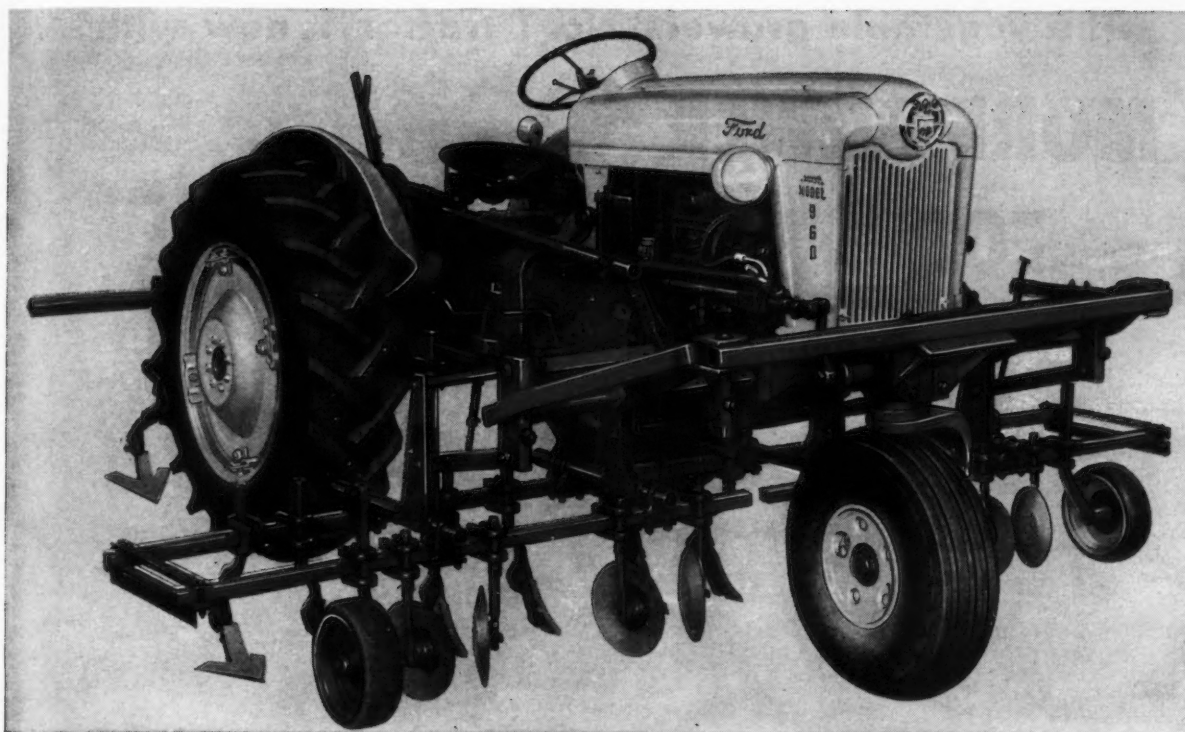
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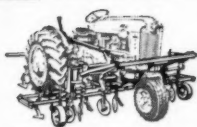
J. A. Eliot

VEGETABLE GROWER



# MORE THAT'S NEW from FORD!

## NEW VEGETABLE CULTIVATOR ATTACHMENT



The new front-mounted Ford Vegetable Cultivator is designed especially for vegetable growing areas. It gives excellent coverage

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The front gangs can be individually adjusted from the tractor seat by handy lever control. Regardless of cultivating depth, the cultivator raises to full height for transport. The cultivator can be quickly attached or removed from the tractor, and it is hydraulically controlled. Its clean design gives excellent row visibility. A wide choice of shanks, sweeps, shovels, weeding discs and knives is available, as well as crop shields, gauge wheels and large capacity fertilizer attachments.

## NEW SINGLE FRONT WHEEL MODEL



Ford row crop tractors are equipped with power steering as standard equipment—you don't pay a cent extra. It is especially appreciated when cultivating—gives you better steering control without fatigue. Sturdy C-type mounting of wheel reduces clogging, provides for easier tire changing.

## NEW WIDE ADJUSTABLE FRONT AXLE MODELS . . .

are also available with power steering as standard equipment.

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So see and try a new Ford row crop tractor of your choice. Convenient terms are available through your Ford Tractor and Implement Dealer. See him!

*Ford Farming*  
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The vegetable growers' No. 1 tractor... now with

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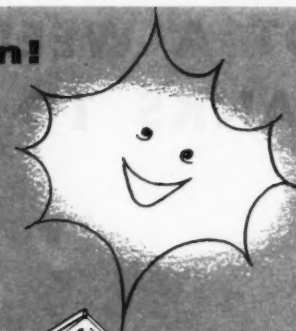
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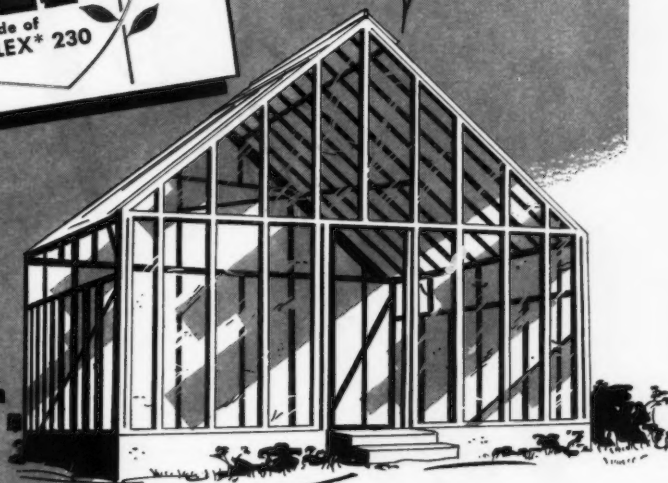


VEGETABLE GROWER

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**Build better  
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of glass construction...  
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With new Sisal-Glaze, the outdoor grower can now grow "under glass" economically. Greenhouse operators can expand production with marginal crops. Cold frames can be built inexpensively and used or sold. Yes, and it's more economical to build new Sisal-Glaze greenhouses than to re-glaze existing facilities.

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1. Scientific tests indicate a *minimum life of ten years*.
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3. Better crops — compares with outdoor growth.
4. No "sunburn" after transplanting.
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8. Does not sag or stretch.
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- LIGHTWEIGHT
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\*T.M. PLAX CORP.

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# WINTER WONDER..

**An 18-inch snowfall and 75-mile windstorm fail to damage Cornell's plastic-panel greenhouse**

By **RAYMOND SHELDRAKE, Jr.**  
*Cornell University*

**L**OW in cost, a plastic-panel greenhouse tested under New York state weather conditions has proved extremely successful.

Earlier research on plastic greenhouses was conducted at the University of Kentucky, with the aim of helping growers to raise out-of-season vegetables without the high cost of glass greenhouses. A preliminary report of this work prompted research men at Cornell to find out whether plastic houses would withstand the heavy snow and ice of New York winters.

A 90 x 16-foot greenhouse was designed and built by the author and two gardeners. The lumber and plastic for the construction of the house cost approximately \$85 for each 16 x 16-foot section. The building cost, excluding labor and using all new, good-grade lumber, was about \$500 for this house. This includes two layers of .004 polyethylene. Heating costs are not included, but would cost as much or slightly more than the cost of the house.

The structure has no foundation, and the roof is made up of sliding panels. These solve the ventilation problem and can be easily removed in summer, when hot sun would break down the plastic.

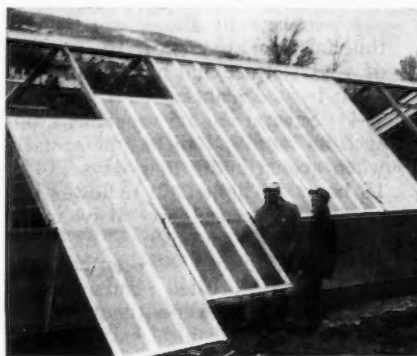
Seven plastics of various thicknesses, including polythylene, polyvinyl, and cellulose triacetate, were

tested for durability, light transmission, and cost. Also under test were two types of bottled-gas heaters, and various kinds of cement for bonding the plastic to the wood framework.

During the past winter and early spring the experimental structure withstood winds up to 75 miles an hour and two heavy snowstorms with depths of 18 and 12 inches. Although

damage when handling the panels. There was no significant difference in light transmission between the various weights.

This type of greenhouse is not intended to completely replace the more durable glass structure, but it will



Tomatoes growing inside plastic greenhouse at Cornell University. Plastic-covered roof panels slide easily into place (left) and can be lowered to provide ventilation or removed completely.

these storms heavily damaged fences, trees, and power lines throughout the area, the greenhouse showed no sign of damage.

It was found that very thin polyethylene material (.002 inch thick) held the snow load as well as heavier weights. However, we prefer panels covered with an .003 or .004 inch material. These slightly heavier materials are more resistant to accidental

serve as an inexpensive substitute for many growers. They will be able to raise such plants as tomatoes, peppers, eggplant, cabbage, and cauliflower, which many now buy for transplanting.

Such a structure would be excellent to use during periods in the late spring just before peak plant sales, as it requires far less labor in handling  
(Continued on page 44)

# SOON YOU'LL REALLY GROW

**A report on the amazing  
new growth stimulator—  
gibberellic acid**

**I**N the Orient rice is often infected by the "foolish seedling" disease. Plants grow very rapidly at first, then die.

This intrigued the Japanese over 19 years ago. Working with *Gibberella fujikuroi*, the fungus which caused the disease, they isolated a colorless crystalline substance called "gibberellin A," which was responsible for the rapid growth, but not for the death of the plants. Later another gibberellin was isolated from the same fungus and was named gibberellic acid. Both compounds have identical growth-stimulating effects on plants.

Only within the past year has there been extensive work in this country on the effects of gibberellic acid on commercial crops. Vegetable crops are affected in several remarkable ways.

1) Dwarfism in many crops is eliminated. Bush beans (both snap and lima) develop twining vines and climb like pole beans. Dwarf peas such as Little Marvel and Laxton's Progress grow taller than the tall varieties (Alderman, Alaska). Increases in heights of 400 to 600% are common.

2) Gibberellic acid primarily stimulates top growth and not roots. With celery, a remarkable elongation of the leaf petioles and more rapid over-all growth occurs under field conditions. Fresh and dry weights of tops may be increased as much as 50% within two weeks. Spinach shows a similar response if grown in short days and at cool temperatures. Greatly increased growth in cucumbers can be seen in five days.

3) Gibberellic acid shortens the time to flowering and speeds up maturity in bush-type snap beans (Bountiful, Contender) and dry shell beans (Michelite Sanilac). Flowering is consistently two to three days earlier, and seed maturity up to a week earlier. This should hasten the breeding of new varieties, as well as enable earlier harvest and marketing of certain crops. Time for flowering is also reduced in certain dwarf-type toma-



Dr. Wittwer and his beanstalk, showing the effect of gibberellic acid on growth and flowering in an early market bean (Contender variety). A 20-microgram dose of gibberellic acid was applied to the growing point when primary leaves were fully expanded. Control plant at left received no treatment. Plants treated in this way grow two to four times taller and produce edible pods from two to five days earlier.

**By S. H. WITTWER and M. J. BUKOVAC**  
*Michigan State University*

atoes (Fireball, Early Chatham) and in broccoli (DeCicco).

No effects of the chemical have thus far been apparent in the progeny of seed (lettuce and bean) harvested from treated plants.

4) Several annual vegetable crops such as lettuce, radish, and spinach, when grown under long days (14 to 18 hours of light daily), flower and produce viable seed three to five weeks earlier. Seed production in Great Lakes head lettuce has been hastened by 31 days. Treated plants produce seedstalks and flower without forming heads. The mechanical barrier of the head is completely eliminated.

5) Certain biennial crops such as carrots and beets may be induced to flower and produce seed several months earlier. Treatment with gibberellic acid enables these plants to completely by-pass the normal cold treatment for flowering. This discovery is highly significant in developing new varieties and in seed production.

6) Fruit setting is stimulated in the tomato without pollination.

Sprays of gibberellic acid applied to the flower clusters are effective in concentrations ranging from 10 to 1000 ppm. Fruits are normal and no injury to the plant occurs. Preliminary experiments indicate that cucumbers and eggplant respond the same as the tomato.

7) Seed treatments promote earlier germination in peas and beans, especially at low temperatures. Growth of seedlings from treated seed is also stimulated.

Gibberellic acid may be applied to plants as a very dilute spray or as a small droplet placed on the growing tip. It is absorbed by the roots if it is applied as a soil drench or added to solution cultures. Finally, it may be applied as a seed treatment. Very small quantities are effective. Only a few micrograms per plant, equal to less than an ounce per acre, are required for most responses.

Many factors affect the responses of plants to gibberellic acid. Fastest growth results with optimum conditions of temperature, light, and min-

(Continued on page 36)

**AMERICAN VEGETABLE GROWER**



# Have You Tried STARTER SOLUTIONS?

**Your transplants will grow quicker and stronger  
and mature earlier if you give them a "boost"**

By **CHARLES B. SAYRE**

*New York Agricultural Experiment Station*

**Q**UICKLY available plant food added to the water used at transplanting makes a starter solution, so named because it gives the plants a quick start. A good nutrient solution poured around the roots at transplanting will revive the plant

broccoli, and similar plants are usually grown in the South or in cold frames, and are likely to be partially starved by the time they are received for transplanting. Consequently, a supply of readily avail-

the solution is strained or poured off carefully to keep out the residue. All this difficulty and extra labor can be avoided by using the completely soluble transplanting mixtures now on the market.

Formerly it was a common practice for cabbage growers to pour about 5 pounds of nitrate of soda into the water tank of the transplanting machine. Although this did result in "greening up" the plants quickly, it was not a good trans-



Comparison of starter solutions, all used at 1/4 pint per plant: No. 8 was given 4 pounds of 13-26-13 per 50 gallons of water applied to the roots; No. 20 got the same solution applied as a foliar spray to the tops only, not the roots; No. 15 was given 3 pounds of alkaline starter 16-48-18 per 50 gallons of water, and No. 7 received water only, no fertilizer. Plants were photographed 23 days after transplanting at New York station.



Advantage of balanced nutrients in starter solutions, all used at 1/4 pint per plant. No. 17 received 3 pounds nitrate of soda per 50 gallons of water; No. 18 was given 6 pounds of 20% superphosphate per 50 gallons of water; No. 19 received 3 pounds nitrate of soda and 6 pounds superphosphate per 50 gallons of water; No. 7 received water only. All were photographed 23 days after transplanting. Notice the well-developed blossom buds on 18 and 19 which got phosphorus.

quickly and stimulate vigorous growth, resulting in earlier maturity and less loss of plants.

Starter solutions are remarkably effective because they supply readily available nutrients to the plant at the time it is in great need of a pickup. During the transplanting operation, contact of the roots with the soil is disturbed, many of the fibrous feeding roots are shorn off, and the plant is likely to receive a severe setback, unless a starter solution is applied.

Starter solutions are most easily used on crops that are transplanted to the field with a transplanting machine. Simply pour the correct amount of transplanting mixture into the tank of water so that the dilute solution will be ejected around the roots as the plants are set.

Cannery tomatoes, kraut cabbage,

able nutrients poured around the roots as they are transplanted is likely to be very beneficial.

A starter solution may also be used effectively on direct-seeded tomatoes by means of a tank attached to the seeder, so that the solution is poured on the seed as it is being covered. Thus used, it will stimulate quick growth of the seedlings.

In 1938 the writer devised a number of formulas for transplanting mixtures and published the results of these tests of soluble plant nutrients used in transplanting tomatoes. Since then over 100 formulas have been tried, including solutions of regular field fertilizers.

The objectionable feature of field fertilizers is the large amount of insoluble residue which would clog the tubes in the water lines unless

planting mixture because it made the plants soft or tender.

Detailed tests over a period of years showed that for starter solutions single-fertilizer materials are not as effective as mixtures containing nitrogen, phosphorus, and potash. It was found that readily available phosphorus was particularly important, since this tended to stimulate root development and earlier maturity. However, phosphoric acid alone even in dilute solution is likely to "burn" the roots. Consequently, a mixture high in available phosphorus is especially effective.

Nitrogen alone stimulates leaf growth but tends to make the plants "soft" or tender, unless balanced with potash and phosphorus. If potash is used alone, the plants make a very slow, dark-colored growth, with very firm stem tissue. But a

(Continued on page 46)





Black Valentine beans on the Stephen Blodgett farm, Fishkill, N.Y. Heavy green manure crops keep organic matter in the soil at the 3% level, and about 750 pounds of chemical fertilizer per acre is applied.



Side-dressing tomatoes two or three times during the growing season, as shown here, has paid dividends on many farms. Some growers apply nitrate only; others use a complete fertilizer to balance crop needs.

# Their Plants Thrive on a **BALANCED DIET**

**These ten top-notch growers get top yields  
by maintaining a balanced supply of nutrients  
in the soil**

By **ELDON S. BANTA**

**T**HE more we learn about fertilizer practices, the more important becomes this fact: the better the balance of nutrients in the soil, the higher the yields obtained, and the better the quality of the vegetable produced.

Once a balance among the various elements in soil fertility has been established for a given vegetable crop, the most economical way to boost yields without sacrificing quality appears to be through increasing all components of the balance, not just one. Soil analysis, and to a lesser extent leaf analysis, are playing major roles in helping growers establish nutrient balance. Then they go one step further and strive for higher and more economical yields by increasing fertilizer rates of application, while maintaining the nutrient balance required by each crop grown.

New York is the leading state in the production of green beans, and yields are among the best found anywhere. Near Lockport John Martin grows a hundred acres or so for processing. Basic to his fertilizer program is a rotation which includes a grain crop, a legume or cover crop, and green manure crops in addition to

beans, tomatoes, cabbage, and broccoli, all grown for processing.

Rotations vary from field to field and from vegetable crop to vegetable crop. The primary rotation Martin follows is planting a field first to wheat, then to clover. The following spring the clover is plowed under and the field is planted to cabbage, broccoli, or beans. Following one of these the field is planted to a winter cover crop of rye or rye grass and clover. This crop is turned under the following spring, and the field is planted to tomatoes. After tomato harvest the field then goes back to wheat.

The cover crops of rye or rye grass in Martin's rotation are not fertilized at seeding time. However, when they are turned under for planting to a vegetable crop, an application of fertilizer is made. In the case of green beans, 300 pounds per acre of calcium cyanamid is plowed under with the cover crop or with clover to help rot the material and to furnish the bean crop with adequate nitrogen. At planting the beans then get a dose of 600 pounds per acre of 10-10-10.

These rates are for beans grown under irrigation. If a field cannot be irrigated, Martin cuts this application by a half or a third because he feels that extra water helps boost yields



J. Lee Phillips, Delmar, Del., applies 2500 pounds of fertilizer per acre under irrigation to get high yields of cucumbers on vigorous vines.

that much. He feels that there is no point in putting on a lot of fertilizer if lack of water so limits root growth that the plants cannot use the extra fertilizer.

Stephen Blodgett in the lower Hudson Valley near Fishkill grows 1500

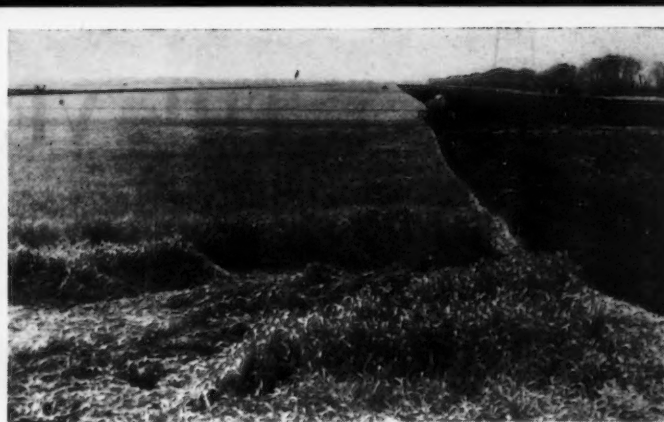
**AMERICAN VEGETABLE GROWER**



During the growing season, some growers apply fertilizer to balance crop needs.



Early cabbage crop gets a side-dressing of 250 pounds of ammonium nitrate per acre on the farm of Roy Smith, Crystal Springs, Miss.



Basic in any soil fertility program is the plowing under of heavy green manure crops, as this field of rye, to boost organic level of the soil.

ET



Green beans growing on the John Martin farm, Lockport, N.Y. Good rotation, heavy green manure crops, and about 900 pounds of fertilizer per acre with irrigation make for high bean yields.

acres of Black Valentine beans for fresh market. His soil and growing conditions are different from Martin's so his fertilizer program is different. Blodgett feels that maintaining a soil organic matter content as near 3% as possible helps him produce good yields of high-quality beans as economically as possible.

To aid this practice Blodgett follows a specific rotation and grows heavy green manure crops. The rotation consists of three years to beans followed by two years to a legume pasture crop consisting of bird's-foot trefoil, Ladino clover, and alfalfa. During the two years of legume cover the fields are used for beef cattle pasture, one of Blodgett's diversifications. During the three years of beans, wheat is sown on fields in the fall as a winter cover crop and is turned under as green manure for the bean crop.

Turned under with the wheat at plowing time is 150 pounds per acre of calcium cyanamide. Then at bean planting an application of 600 pounds per acre of 5-10-5 is put in the row. These chemical fertilizer applications balance up the needs of the bean crop for top yields. However, early in the spring Blodgett often finds bean growth slow and plant color a little pale. This shows a slight deficiency of nitrogen, so during the cool periods

of spring Blodgett makes one or two applications of urea to bean fields.

In the list of vegetable crops that John Martin grows we mentioned tomatoes, and their place in his rotation. The cover crop preceding tomatoes is plowed under with an application of 300 pounds of calcium cyanamide and 1700 pounds of 8-16-16 fertilizer. This is the basic fertilizer for his tomatoes.

To get plants off to a quick start he uses GLF Starter Solution. He doubles the recommended rate of application and mixes the solution with water in a sprayer tank, then pumps into the transplanter tank. This insures thorough mixing.

Three weeks after planting the tomatoes receive a side-dressing of 300 pounds per acre of 10-10-10. All told, Martin puts some 2300 pounds of fertilizer in each acre of tomatoes to balance up requirements for top yields of quality fruit. Tomatoes not irrigated receive one-half to two-thirds this amount.

At Goldsboro, Md., T. Noble Jarrell likes to grow the biggest and best yields of tomatoes for his canning plant. He is certain that balanced fertilization is a key in helping him produce up to 12½ tons of tomatoes per acre on a great portion of his acreage.

To start with, 1500 pounds of 5-10-10 per acre are turned under

with the cover crop. Plants are set with a 10-52-17 starter solution (Victor Take-hold) and then receive their first side-dressing of 350 pounds per acre of 6-12-12 at the time of the first cultivation. At the second cultivation they get another 350 pounds of the same and at the last cultivation 250 pounds of 10-10-10. This totals up to about 1¼ tons of fertilizer per acre.

C. S. Gifford and Sons at Berrien Springs, Mich., grow tomatoes for fresh market, mostly for green-wrap. On their sandy loam soil a green manure crop of rye plus 200 pounds of 10-6-4 per acre are plowed under for the tomato crop. Before planting, 600 pounds of 0-16-16 is broadcast and disked in, then plants are set with a 10-50-10 starter solution (Bonro) at 3 pounds per 50 gallons of water. A pint of water is given to each plant. Fields are side-dressed two or three times with 200 pounds per acre of either 3-9-18 or 8-8-8.

After fruits begin to develop, the Giffords prefer to have tomatoes growing more slowly because it reduces fruit cracking. Hence they watch nitrogen applications very closely and apply little or none in late side-dressings. Though maintaining a balance for good yields, the Giffords know that an overdose of nitrogen can spell ruin to their yields of number one fruits.

Near Crown Point, Ind., Tunis DeVries and Sons grow some 25 acres of Rutgers and Garden State tomatoes on still another type of soil. Their fertilizer program begins after plowing when they disk in 400 pounds per acre of 5-20-20 as a usual practice. However, if tomato yields were low for the previous crop, the season's application may go up to 700 pounds per acre.

Soil tests help determine rates of application as well as crop response in previous years. One side-dressing of 150 pounds per acre of ammonium nitrate made just after the first clus-

(Continued on page 32)

applies 2500 pounds of irrigation to get on vigorous vines.

hat there is no lot of fertilizer its root growth use the extra

the lower Hud- still grows 1500  
VEGETABLE GROWER

# THE VEGETABLE AREAS OF



This is the tenth of a series on the important vegetable areas in the United States. New Jersey, Florida, Eastern Virginia, Arizona, Mississippi, Louisiana, Long Island, Maine, and California's Imperial-Coachella Valleys were visited in previous articles. With this article we continue our vegetable tour of California. Future articles will take us to the Coastal Areas (including the Salinas Valley), and the South Coast, Delta, and Tulare Basin.—Ed.

Map at left shows the southern two-thirds of the Central Valley, where vegetable production is centered. Shaded areas represent concentrated growing areas. Inset map at far left shows area in relation to rest of state.

By **JOHN C. LINGLE**  
University of California

**T**HE heart of the greatest agricultural region in the nation is a great geographic bowl, the central valley of California. Almost completely ringed by mountains, this valley is drained by two major rivers, the San Joaquin and the Sacramento. The valley is over 400 miles long and averages about 50 miles wide, providing over 7½ million acres of crop land.

Vegetable production is scattered throughout the southern two-thirds of the valley. Vegetables are usually grown in large acreage plantings in rotation with field and forage crops. Single crop concentrations are largely localized in certain areas, usually because of some climatic or soil factor especially favorable for its production.

Winters are comparatively mild, severe freezes being a rarity. The summers are long and hot, giving a long growing season. Rainfall occurs only from late fall to early spring, and it varies from 20 inches in the central part to 10 or less near the ends of the valley. Sunlight is usually bright, even in midwinter, except for periods of fog in some sections.

The alluvial soils of the valley are quite varied and change texture quickly, often within a short distance. These soils are usually quite fertile except for nitrogen which must be supplied in rather large amounts to most vegetable crops.

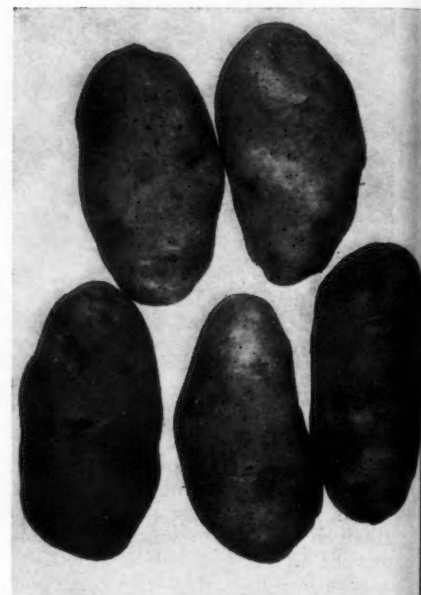
Most have such depth that they can be extensively leveled for surface irrigation without seriously affecting fertility.

Also, at the point where the Sacramento and San Joaquin rivers join, the most extensive deposits of organic soils in the nation have been developed. This area is commonly referred to as the "Delta." Formerly lying near sea level, most of the islands of this area are now several feet below that level, being protected by a vast system of levees and drainage canals. High water tables in the Delta due to the subsidence of the organic soil below sea level enables subirrigation to be practiced on most crops, considerably reducing irrigation costs.

Of the three most important vegetable crops in California, the Central Valley areas produce the largest share of two of them: potatoes and tomatoes.

**Potatoes**—Potato production is concentrated mostly in two main areas in the valley. The largest concentration is grown in Kern County, the southernmost county in the valley. Here in a broad band centering around Edison, Bakersfield, and Shafter potatoes are grown in very large acreages in rotation with alfalfa and cotton, the major field crops.

Production in this area is primarily concentrated in the spring crop. Because of the very mild winters, potatoes are planted in January and February and harvest begins in April and continues into July. The most favorable growing tempera-



"California Long White" potatoes—the White Rose variety. Heat-resistant and well-adapted to the area, it makes up 75% of the production.

tures are found during the latter half of March, April, and May, so naturally any early harvesting is done at a sacrifice in yield. However, the much higher prices received for early potatoes is thought to more than make up for the difference.

Over three-quarters of the production is of the White Rose variety. This variety is well adapted to the area, being more heat-resistant than other important varieties. The Pontiac is the only other variety of any commercial importance. Because of the characteristic shape and skin character of the White Rose, the Kern County growers have built a market reputation for the famous "California Long Whites" as their potatoes are known to the eastern produce trade.

The other important potato area of the valley is centered in the Delta, which lies mostly in San Joaquin



# REAS OF AMERICA

# CALIFORNIA'S CENTRAL VALLEY

vegetable  
Eastern  
Island,  
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valley).  
-Ed.



Loading tomatoes for the trip to the cannery.

Opening furrows to plant asparagus crowns in Yolo County. High ridges thrown up for part of the season produce white spears for canning.



County. Here production is concentrated in the summer, but is spread over several months of the year, harvest occurring from July to late October. Successful production over this long period is due to the favorable climate, the area being cooled in midsummer by bay breezes from the Pacific Ocean, and to the fertile peat soils of the area. A yield of 1155 bushels per measured acre has been recorded.

Because of this favorable climate, a wider range of varieties is grown

The commodities, leading counties, acreages, and harvest seasons of vegetable crops in the Central Valley.							
COMMODITY	COUNTY	ACREAGE	HARVEST SEASON	COMMODITY	COUNTY	ACREAGE	HARVEST SEASON
Potatoes	Kern	44,000	Apr.-July	Green Limas	Stanislaus	6,000	Sept.
	Tulare	9,000	June-July; Nov.-Dec.		San Joaquin	2,000	Oct.-Nov.
	San Joaquin	7,000	Sept.-Oct.	Celery	Contra Costa	500	Oct.-Nov.
	Fresno	5,000	June-July				
	Madera	1,700	June-July	Sweet Corn	Kern	3,000	June; Oct.-Nov.
Tomatoes, Fresh Market	Tulare	2,000	June-July		Tulare	1,200	June; Oct.-Nov.
	Merced	4,000	June-Aug.	Lettuce	Kern	1,000	Apr.; Nov.
	Fresno	500	June-Aug.		Contra Costa	500	Nov.
	Stanislaus	4,000	Sept.-Nov.	Onions	San Joaquin	3,200	May; July
	San Joaquin	2,500	Sept.-Nov.		Kern	1,800	May
Tomatoes, Processing	Contra Costa	1,200	Sept.-Nov.		Yolo	1,000	July
	Solano	500	Sept.-Nov.	Peas	Kern	2,200	Apr.
	San Joaquin	30,000	Aug.-Oct.		Sacramento	700	May
	Yolo	14,000	Aug.-Oct.		Yolo	500	May
	Sacramento	9,000	Aug.-Oct.	Watermelons	Merced	2,200	July-Aug.
Cantaloupes	Solano	4,000	Aug.-Oct.		San Joaquin	1,500	Aug.-Sept.
	Sutter	4,000	Aug.-Oct.		Stanislaus	1,500	Aug.-Sept.
	Stanislaus	3,000	Aug.-Oct.		Fresno	1,000	July-Aug.
					Tulare	1,500	July-Aug.
Melons, Persian and Honey Dew	Stanislaus	2,400	Aug.-Sept.	Sweetpotatoes	Merced	7,000	Sept.-Oct.
	Yolo	1,500	Aug.-Sept.		San Joaquin	2,500	Oct.-Nov.
	Fresno	1,000	Aug.-Sept.		Fresno	1,000	Oct.-Nov.
	Tulare	600	Aug.-Sept.		Tulare	750	Nov.
Asparagus	San Joaquin	55,000	Mar.-June	Spinach	Yolo	1,000	Apr.
	Contra Costa	10,000	Mar.-June		Stanislaus	1,000	Apr.
	Yolo	2,000	Apr.-June				

County around the city of Merced. The fall green-wrap crop, handled in a much different manner, is grown in the upper "west side" of the San Joaquin Valley in Stanislaus, San Joaquin, and Contra Costa counties. Important shipping points of this area are Patterson, Tracy, and Brentwood.

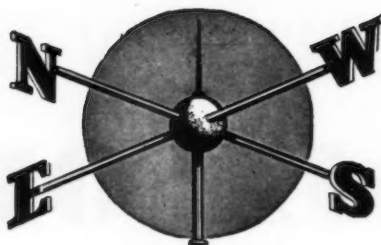
In growing the early crop, every effort is made to attain early yields. The crop is entirely transplanted into the fields while it is still quite cool. The growers in the Visalia area hotcap the plants immediately after planting to hasten plant growth. Smudge pots are used extensively in both areas when temperatures near the frost point.

In former years practically all of these tomatoes were staked and tied, but in the Merced area, because of the rising cost of labor, this practice is diminishing. The tomatoes are picked either as pinks or green-wraps.

The fruit from the Merced area is packed in large co-operative or

(Continued on page 42)

# STATE



# NEWS

- Georgia Growers Are Narrowing Up Their Onion Rows
- Top Tomato Man in New Jersey Tops 29 Tons Per Acre

## For Better Marketing

**GEORGIA**—An association of cantaloupe growers has been formed to promote better marketing and to carry on a program of grading and packaging at the Tifton State Farmers Market. Officers of the association are Herman Denby, Tifton, president; W. C. J. Brown, Fitzgerald, vice-president; Fred Rigdon, Tifton, secretary-treasurer. County Agent William H. Pool is advisor for the group.

More than a million onion plants have been set out in the Toombs County area. The plants came from Texas fields. About 72,000 plants to the acre are used when the crop is set in rows 20 inches apart. Some

and ill-shaped if not harvested at the right time so the variety is recommended for special plantings only.—Mrs. Pauline T. Stephens.

## Tops in Tomatoes

**NEW JERSEY**—The Ten-Ton Tomato Club, sponsored by the state extension service and the New Jersey Cannery Association, passed out praise and awards for the Garden State tomato growers at the recent meeting of the New Jersey State Horticultural Society in Atlantic City.

Everett Adams, of Vincentown, received a \$100 bond for being top man in yield. Adams nearly tripled minimum requirements for membership by growing 29.20 tons to the acre on 10½ acres.

Arthur D. Chant, of Beverly, was second with 29.01 tons to the acre, and Joseph E. Rudderow of Moorestown was third with 27.66. In the quality class first place winner was Harry J. Snook, Cranbury; second

place, Raymond G. Heagele, Cranbury; and third place, Harold Box, Bridgeton.

Charles H. Nissley, extension vegetable specialist at the College of Agriculture, Rutgers University, reported membership in the Ten-Ton Club in 1956 was 719, second best in the history of the club, as compared with 1934, the first year of the club, when only 12 growers qualified for membership.

## Best On Record!

**OREGON**—In his address before the Blue Lake Packers, Inc., at the annual meeting of the co-operative, N. W. Merrill, manager, predicted a reduction of sweet corn acreage for the coming season. Merrill reported the 1956 corn pack the largest on record and considerably larger than anticipated "due to increased yields per acre—not increased acreage."

Merrill told the 520 growers in attendance. (Continued on page 40)

## CONFERENCE FOR GREENHOUSE VEGETABLE GROWERS

A newly organized conference for Greenhouse Vegetable Growers has been scheduled for February 19-20 at Ohio Agricultural Experiment Station, Wooster. Specialists from the experiment station and college of agriculture of The Ohio State University will serve as the staff. One or two out-of-state speakers will be present.

Among the subjects to be considered will be plastic greenhouses, recent developments in pest control, tomato handling and storage, tomato fruit setting, problems in Bibb lettuce production, and plant nutrition. The conference will involve lectures, discussion, and laboratory work. It is designed entirely for commercial greenhouse growers.

For a copy of the printed program write Department of Horticulture, Ohio Agricultural Experiment Station, Wooster.

of the larger growers are experimenting with 16-inch rows, which means more plants per acre.

**Sumter County Sweet Potato Association** has climaxed its efforts for a curing house with a 50,000-bushel capacity structure at Americus, costing \$80,000. The building has 12 rooms, each with 4500-bushel capacity. Only certified potatoes are accepted for curing. The State Department of Agriculture furnished the funds for the building.

Officers of the association are Pete Rhime, Americus, president; Tom Finch, Thalean, vice-president; A. B. Carlan, DeSota, secretary-treasurer.

**R. E. Ponder**, large-scale vegetable plant grower in the Tift County area, was recently elected mayor of Omega. Ponder had been serving in this capacity since the death of the former mayor.

A new early sweetpotato, **Earlysweet**, has been developed at the Georgia Coastal Plain Experiment Station.

Horticulturists Silas Harmon and O. J. Woodard, who developed the new variety, report a phenomenal yield of 308.20 bushels an acre compared with 233.91 bushels an acre for **Goldrush**, and 157.77 bushels an acre for **Georgia Red**.

Earlysweet tends to become cracked

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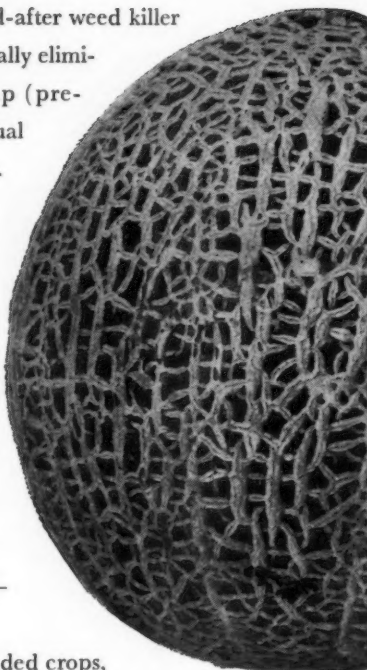
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**Naugatuck Chemical Division**  
Naugatuck, Connecticut

producers of seed protectants, fungicides, miticides, insecticides, growth retardants, herbicides: Spergon, Phygon, Aramite, Synklor, MH, Alanap, Duraset.



Myron Mommsen, Rice Lake, Wis., washes, grades, packs, and ships potatoes from early September through mid-March, under his Lazy-A brand.

## HIS CHOICE: Russet Burbank

**Wisconsin grower gets top yields of 600 bu. per acre, follows crop rotation-mixed fertilizer program**

By **JOHN A. SCHOENEMANN**  
*University of Wisconsin*

**F**ROM the gently rolling countryside of northwest Wisconsin's "Indianhead" country come some of the finest Wisconsin-grown Russet Burbank potatoes.

Myron Mommsen, of Rice Lake, started growing the Russet Burbank over 12 years ago. His chief reason—a better market demand and price for this variety.

The Russet Burbank acreage on Mommsen's Lazy-A Ranch has risen from a mere 5 acres in 1944 to 140 acres this past season. In addition, he grew about 60 acres of the new Early Gem variety for the early market. Myron also likes the Russet Burbank variety because of its scab tolerance and excellent storage quality. He makes a point, too, to buy only Minnesota certified seed potatoes.

This is how Mommsen goes about producing the Russet Burbank on his light sandy loam and silt loam soils. First he limes his fields to a pH of 6.0 to 6.5, using a good grade of dolomitic limestone. A three-year rotation of oats, sweet clover, and potatoes is followed. He plants from about April 20 to May 15, using whole B-sized certified seed spaced 30 inches apart in rows 3 feet apart. A 2-row assisted-feed planter is used

*(Continued on page 22)*

AMERICAN VEGETABLE GROWER

Make Your Time Worth More Money...

# Cultivate 8 Rows at Once!

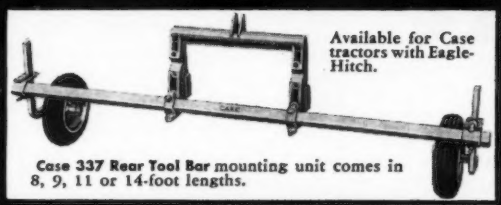
## CASE®

8-SPEED  
.....  
4-PLOW **400**

12-SPEED  
.....  
3-PLOW **300**

You can cultivate eight 14-inch rows planted on 40-inch beds—or on the level—with Case 4-plow 400 and 3-plow 300 tractors... or you can work six level rows spaced at 18, 22 or 24 inches, or four level rows spaced 36 or 40 inches. You'll do clean, accurate work because Case vegetable cultivators are unusually strong and rigid. You match travel speeds *exactly* to size of plants and soil conditions with the 8-speed (2 creeper) Case 400, or 12-speed (3 creeper) Case 300. On every job and load, the new Case system of overlapping gear speeds matches tractor travel and engine speeds for top economy and field performance.

Case 400 and 341 cultivator work eight 14-inch lettuce rows on four 40-inch beds. High-clearance models, too.



Case 337 Rear Tool Bar mounting unit comes in 8, 9, 11 or 14-foot lengths.

Available for Case tractors with Eagle-Hitch.

## Speed Up Irrigation Jobs with CASE Tool Bar Equipment

Spring teeth. Ideal for preparing seedbeds, digging grass, controlling weeds.

281 border disk plow. Has two 28-inch x 1/4-inch heat-treated disks. Makes high, well-shaped borders.



203 Furrower has 14-foot tool bar, choice of furrowers. Gauge wheels hold depth.



Double tool bar has ample clearance for more tools. Ideal for mounting planting units.



**START RIGHT NOW** making more money with modern Case equipment. You can buy it with a down payment on Case Crop-Way Purchase Plan, make later payments to suit your income.



# J. I. CASE

J. I. CASE COMPANY • RACINE, WISCONSIN

You make farming a more profitable business when you choose and use full-line Case tractors, balers, combines, and other machines.

## MAIL for Case Money-Making Story

We'll send you complete information on Case machines checked below. Mail to J. I. Case Co., Dept. B-217, Racine, Wis.

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| <input type="checkbox"/> 3-Plow 300 tractors | <input type="checkbox"/> Vegetable cultivators  |
| <input type="checkbox"/> 4-Plow 400 tractors | <input type="checkbox"/> Irrigation equipment   |
| <input type="checkbox"/> 6-Plow 600 tractors | <input type="checkbox"/> Crop-Way Purchase Plan |

Name \_\_\_\_\_

Address \_\_\_\_\_



**The Dynamic 4-Plow WD-45 Tractor** with automatic **TRACTION BOOSTER** system shifts weight instantly to its drive wheels, the way a champion fighter shifts weight on his feet for a knockout punch... puts up to 2½ tons total on the rear wheels! Complete with Power-Shift Wheels, SNAP-COUPLER hitch, Two-Clutch Control. Natural-Feel Power Steering optional.



## ALL MUSCLE ... no fat

Remember when Jack Dempsey held the championship of the world... pitting 187 pounds of muscle against bulky heavyweights scaling up to 245 pounds?

That's the way it is with tractors today. It's muscle that counts... not just size or weight.

The dynamic WD-45 is all muscle—no fat. Fuel-wasting, soil-compacting, tire-wearing, hard-steering "dead" weight has been engineered out... *two thousand pounds of it!*

Saving that expensive ton of difference enables you to move faster, do more, save time, make money... gives you up to one-third more work-power per dollar... plus longer tractor life!

Yes, the 4-plow, 4-row WD-45 Tractor is truly a champion worthy of the name. On your farm this trained cost-fighter will make money for you on every job it tackles, and backed by Allis-Chalmers *True Original Parts and Service*... *T-O-P-S*... it will always remain in peak condition... *TOPS!*

It's easy to own a WD-45. See your Allis-Chalmers dealer today!

ALLIS-CHALMERS, FARM EQUIPMENT DIVISION, MILWAUKEE 1, WISCONSIN  
TRACTION BOOSTER AND SNAP-COUPLER ARE ALLIS-CHALMERS TRADEMARKS. ©

**ALLIS-CHALMERS**  
Engineering in Action



## HIS CHOICE

(Continued from page 20)

to insure against skipped hills at this wide spacing.

Mommsen likes to fertilize his crop according to soil test results but in general uses about 700 pounds per acre of 5-20-20 in the row at planting, plus a mixture of 150 pounds of 60% superphosphate and 300 pounds of 60% muriate of potash per acre side-dressed at the first cultivation. He plans to substitute sulfate of potash for the muriate form next season, to help improve the cooking quality of his potatoes. In addition, 200 pounds per acre of ammonium nitrate is side-dressed in mid-June.

All of his mixed fertilizer is fortified with small amounts of manganese, zinc, boron, and copper, to guard against possible minor element deficiencies. Aldrin is also added as insurance against wire worms and white grub injury.

Weekly sprays of DDT and carbamate are applied with a special home-modified 20-row sprayer equipped with a brush-type boom using no drop nozzles.

## Irrigates When Necessary

The entire acreage can be irrigated. Mommsen recognizes the importance of careful, timely irrigations to insure top quality and yields. Two 1300-gallon-per-minute 185 h.p. LP gas-powered pumping units feed three portable sprinkler lines in the fields. About 1¼ inches of irrigation water is applied about once a week unless natural rainfall is sufficient. Water is supplied from a nearby river.

Harvesting starts in September. Mommsen gets yields of 500 to 600 bushels per acre, averaging 75 to 85% No. 1's. Several bulk-type harvesters, designed, engineered, and built in his own farm shop, are used to dig the crop. Potatoes are stored in two Quonset-type insulated storages having a total capacity of 70,000 bushels. All culls and undersize tubers are removed as the potatoes are piled into the storage houses.

Potatoes are washed, graded, packed, and shipped from early September through mid-March, under his own Lazy-A brand.

Mommsen has a reputation for carefully checking and double checking before making any move in his production program. He seldom makes mistakes. His chief concern is to grow high quality potatoes. His product has been helping to build a good reputation for Wisconsin-grown potatoes in our mid-western markets. **THE END.**

**AMERICAN VEGETABLE GROWER**



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page 20)

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GETABLE GROWER

# Worl Brothers, Best Tomato Growers

*Quoted from the Peru, Indiana Tribune*

**Bunker Boys  
Average Over  
30 Tons, Acre**

**Harvested Nearly  
Half-Million Pounds  
On Less Than 8 Acres**

LAFAYETTE, Ind. (UP)—Two Bunker Hill brothers were acclaimed today as the greatest Indiana tomato growing champions of all time.

Garry Worl, 20, and his brother Terry, 13, harvested nearly half a million pounds of tomatoes from a field less than eight acres in size to rack up the best per-acre average ever recorded in competition by either a 4-H or an adult grower in Hoosierland.

On the official records, their achievement was listed as an average of 30.53 tons per acre from 7.94 acres. The record-breaking status of the yield was attested to by Roscoe Fraser, Purdue University extension horticulturist.

The Worl brothers won the 1956 Indiana 4-H tomato contest. Along with the victory they collected prizes from the sponsoring Indiana Canners Association and the Kokomo canning firm of Libby, McNeill & Libby, to whom the crop was sold.

The Worls made a net profit of \$2,942 on their crop, an average of \$370 an acre. They grew the tomatoes in a field used for corn the last two previous years.

Runnerup was Denny Middlesworth, Greentown.

Kenneth Lucas, Royal Center, won the double-tonnage division of the contest, for growers who sell their crop on an ungraded basis. Lucas' yield averaged 22.5 tons from 1.7 acres. He believed he might have approached the Worl record yield if rain had occurred at the right time.

**You, Too, Can Grow  
Championship Tomatoes**

with



## NIACIDE Z

**Gives Exceptional Control Over  
Anthracnose and Other Diseases**

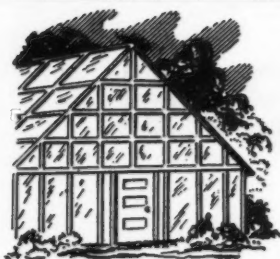
Worl Brothers used Niacide Z to help compile their remarkable record. Here is proof positive of the outstanding protective qualities in this potent Niagara fungicide. It's in wide use throughout all tomato growing areas for the control of that costly problem, anthracnose, as well as early blight, septoria and certain minor tomato diseases. Prove to yourself, this coming season, the merits of Niacide Z. For full facts see your Niagara field man or local Niagara dealer.

## Niagara CHEMICAL DIVISION

FOOD MACHINERY AND CHEMICAL CORPORATION

Middleport, N. Y., Richmond, Calif., Jacksonville, Fla., Tampa, Fla., Pompano, Fla., Wyoming, Ill., New Orleans, La., Ayer, Mass., Harlingen, Tex., Yakima, Wash., Pine Bluff, Ark., Canadian Associate: NIAGARA BRAND SPRAY COMPANY, LTD., Burlington, Ontario





## SAVE \$ ON CONSTRUCTION COSTS

by Erecting a

# PLASTIC GREEN HOUSE

INEXPENSIVE • EASY • EFFECTIVE

with

## Larvacover

### POLYETHYLENE

Supplied in Easily Handled Lightweight Rolls—80 inches wide

- SIMPLE TO ERECT   ■ LOW IN COST
- EASY TO MAINTAIN   ■ LIGHT WEIGHT
- EXTENDS GROWING SEASONS   ■ STRONG
- ADJUSTABLE TO CLIMATE CHANGE
- PRACTICAL   ■ EASY TO VENTILATE
- EASY TO HANDLE   ■ LESS NIGHT HEAT LOSS

In Tests At State Experimental Stations, It Has Been  
Shown That Most Plants Actually Thrive  
In Plastic Green Houses.

**Overhead and Heating Costs Reduced**

### Sterilize Soils Chemically to INCREASE YIELDS—REDUCE COSTS

use

## Larvacide

(Chlorpicin)

### Soil Fumigant

- Performance Equal to a Good Steaming Job
- Economical to Use
- Safe for Personnel
- Easily Applied

—THOUSANDS OF SATISFIED USERS—



For Free Booklet & Technical Information, Write

## Larvacide Products, Inc.

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NEW YORK 6, N.Y.

West Coast: 1515 Third St., San Francisco, Cal.

## DOUBLE ACTION

Soil fumigant controls disease of  
potatoes and weeds at same time

A BIG problem in the light, sandy soils found in the potato growing areas of Oregon, Washington, Idaho, and California is the soil-borne fungus known as early maturity disease.

After two years of trials on the Clarence Hill farm near Klamath Falls, Ore., plant pathologist Roy Young of Oregon State College has come up with a solution to the problem.

Young used a new soil fumigant, Vapam (made by Stauffer), at the rate of 190 pounds per acre in 1955 and not only controlled the disease but held in check such troublesome weeds as pigweed, lambsquarter, and several grasses.

Potato yield on the fumigated land shot up to 160 sacks per acre compared with 40 sacks per acre on the untreated land. In 1955 yields in the area were low due to frost injury.

### Carryover Benefits

Carryover benefits, with no further treatment, gave an additional yield boost of 50 sacks of potatoes in the fall of 1956.

In an attempt to lower fumigation costs, land planted to potatoes in 1956 on the Hill farm was treated with only 40 pounds per acre of the fumigant. Yield boost this time was around 40 sacks per acre more than from untreated plots. Cost of fumigating was held to about \$40 an acre.

Symptoms of early maturity disease are yellowing—usually by mid-August—and dying plants soon after. Growers report that in addition to a

Plans for a low-cost potato storage are now available. The aboveground 50-foot square storage is designed to hold 17,500 bushels. Send \$1.50 to AMERICAN VEGETABLE GROWER, Willoughby, Ohio.

reduction in total yields, sizing of potatoes to pass grade standards is also seriously reduced by the disease.

In the experiments, the liquid fumigant was applied with a special subsoil injector developed by G. E. Page, Oregon State College agricultural engineer, and Harold Jensen, nematologist. Injected into the soil about 10 days before planting time, the liquid turns to gas and moves out of the soil ahead of planting time.—Harold and Lillie Larsen.

AMERICAN VEGETABLE GROWER

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VEGETABLE GROWER

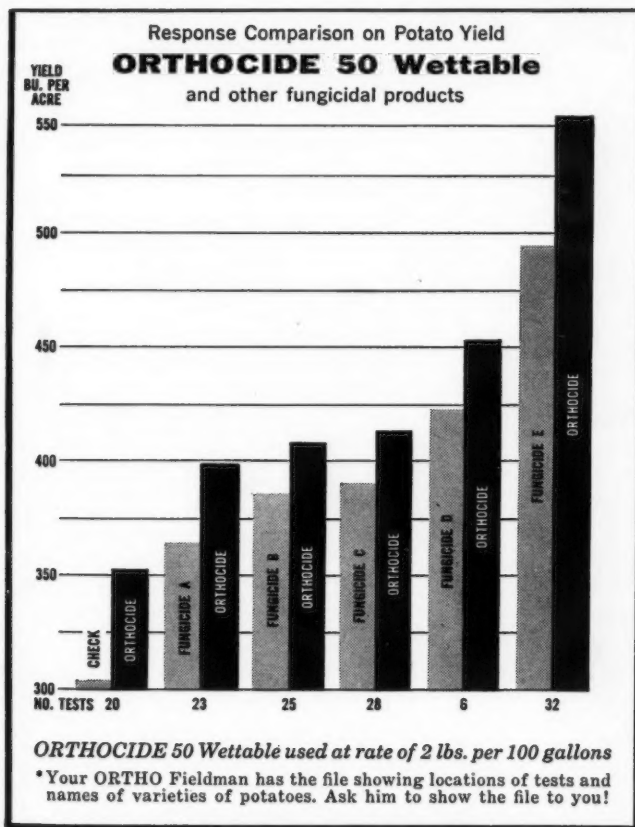
## ORTHOCIDE 50 Wettable

(contains captan)

# WINS FIRST PLACE

in potato and tomato fungicide comparison tests

Look at these results from 134 comparisons to ORTHOCIDE on 12 varieties of potatoes in 15 states and 3 Canadian provinces\*



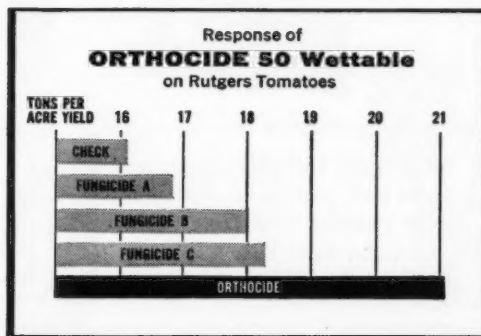
See for yourself in the result chart at the left. ORTHOCIDE 50 Wettable proved superior to other fungicides tested.

When you use ORTHOCIDE (contains captan) it can be like "extra money" growing on your potato plants. To get that "extra money" *this crop year*—start an ORTHO program featuring ORTHOCIDE now.

Tomatoes, too!



ORTHOCIDE 50 Wettable increased yield nearly 3 tons per acre over copper 53; exactly 3 tons per acre over competitive fungicide #1; 4¼ tons per acre over competitive fungicide #2 and nearly 5 tons per acre over untreated plants.



Proof like this points the way clearly to greater profit from better yields of better quality tomatoes. Isn't that what you raise them for? Then use ORTHOCIDE!



CALIFORNIA SPRAY-CHEMICAL Corp.

Executive Offices: Richmond, Calif.; Washington, D. C.

District Offices: Portland, Oregon; Sacramento, San Jose, Fresno, Whittier, California; Phoenix, Arizona; Caldwell, Idaho; Shreveport, La.; Memphis, Tenn.; Maumee, Ohio; Haddonfield, New Jersey; Medina, New York; Columbia, South Carolina; Orlando, Florida; Springfield, Mass.; Maryland Heights, Mo.



## Build Yield-Power equal to more acres

### SWIFT'S PLANT FOODS BRING MORE CASH INCOME PER ACRE

Build your income by building the Yield-Power of your soil—make each acre produce extra dollars. It's more profitable than planting more acres in high-value crops.

Use Swift's Specialized Crop Makers—**Vigoro Commercial Grower**, **Blenn** or **Brimm**—if you want the absolute peak in yield and quality. They contain extra growth elements especially needed by fruits and vegetables for top quality as well as yield. **Red Steer**, too, is the choice of thousands of leading market growers.

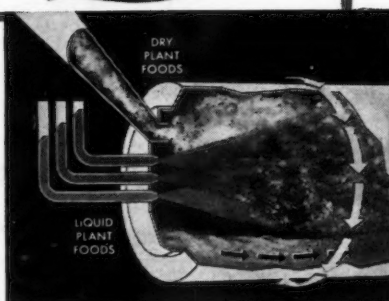
Swift's plant foods are made by the exclusive new **FLO-FUSION** process which packs each particle with fertility—assures balanced feeding of your crop. They are made in plants located in your area, so they can be tailored to local soil and crop needs.

The high market value of your crop—quality as well as yield—demands special care. This year build Yield-Power equal to more acres of good land—use the latest and best plant foods.



#### Swift's new FLO-FUSION process packs each particle of plant food with supercharged Yield-Power

High-quality liquid plant foods are injected into dry materials in a revolving FLO-FUSION processing chamber at Swift's Plants. Millions of individual chemical reactions convert raw materials into chemically-hitched plant food, drying the particles as they are formed. You get the benefit of this FLO-FUSION process only at Swift Plants throughout the nation.



# Swift

102<sup>ND</sup> YEAR

PLANT FOOD DIVISION • CHICAGO 9, ILLINOIS

To Serve Your Farm and Family Better

## DO YOU KNOW THE pH OF YOUR SOIL?

**Better check it, to make sure  
you aren't wasting fertilizer**

By **EARL F. DOWNEY**

**O**NE ton of fertilizer intelligently applied can produce much more effective fertilization than 10 tons used indiscriminately. This is why we depend upon systematic soil testing, to tell us the degree of acidity or pH in our soils.

Most of the beneficial nutrient elements in fertilizer become locked up in soil with a pH below 5.5 (acid) and above pH 7 (alkaline). When the soil pH is brought within the proper growing range of the crop, the fertilizer nutrients become more readily available.

As an example: When the soil pH range is from 4.5 to 6., very little phosphoric acid is available. Just as soon as this pH range is changed to run from 6. to 7., by the use of lime in some form, the phosphoric acid is unlocked and plant roots are able to take up the nutrient.

Agricultural chemists have made available soil-testing equipment that even unskilled persons can use to advantage. I have used many different kits. One of them is Sudbury.

These kits will tell you your soil pH. They also help you determine the amount of plant nutrients to add to the soil to bring it to a high state of productivity. The amount is given in percentages. This is the right system, to my way of thinking. Even though you could determine the quantity of any element in the soil, how would you know if it were enough or too little? The kits tell you just how much of what to add.

#### 6.5—A Happy Medium

Boron is much more readily absorbed by a crop growing in a soil with a pH of 6. to 6.5 than it is at pH 7.

Nitrogen is more readily available between pH 6. and 7. than anywhere else on the pH scale. This indicates that high-nitrogen fertilizers will not be as effective when applied to soil outside this range in pH.

Potash becomes less and less available to crops as the pH drops below 6. For root crops, especially, potash is very essential, so be sure your soil pH is corrected to run from 6. to 7.

The only sure way to correct the acid or alkaline condition of your soil so that your crop will derive the maximum benefits from fertilizers is to make soil tests.

THE END.

AMERICAN VEGETABLE GROWER

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VEGETABLE GROWER

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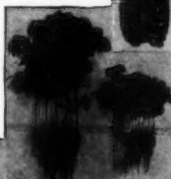
# BIGGER and BETTER CROPS



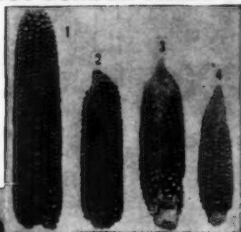
## TESTED FERTILE SOIL BRINGS BUMPER YIELDS

Far sighted farm leaders, agricultural colleges, experiment stations, and other soil scientists have conducted thousands of field trials that prove the amazing benefits of correct soil fertility. To produce the healthiest highest yielding crops, phosphate, potash and nitrogen must be supplied in proper balance. Too little or too much may cause weak, stunted plants and poor yields.

Beans—The vigorous healthy soybean plant at left produced heavy yield, more nitrogen nodules. Poor soil fertility caused stunted plant at right, low yield, little soil improvement.

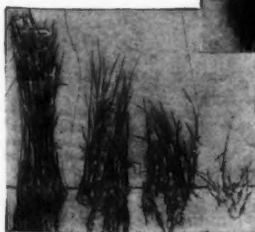


Corn Ear 1 was grown in balanced soil. Nubbins 2, 3 and 4 were from soil that lacked nitrogen, phosphate or potash.



## 10-Fold Increase in Wheat

These wheat tests show yields increased 10 times with proper fertilizer. Note vigorous root system, lush heavy top growth at left. Where not enough potash was used, yield dropped 8 bu.; insufficient phosphate cut yield 19 bu. per acre.



Fertilized Needed Lacked No  
Correctly Potash Phosphate Fertilizer

## Now You Can DO IT YOURSELF

### 450,000 Users Grow Bigger Crops

R.D.C., Penna.—"10,000 tomato, pepper and vegetable plants turned yellow and grew only 4 in. high. With my Soil Test Kit, I found soil deficient in nitrogen—now I have wonderful plants."

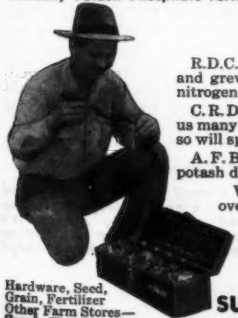
C.R.D., Penna.—"just bought land adjoining our farm and tests will save us many times the cost of Kit. We felt it would need lots of lime but it didn't, so will spend our money on needed phosphorus and potash."

A.F.B., Iowa, increased his bean yield 50% by correcting phosphate and potash deficiencies his Sudbury Kit revealed.

W.L.D., Penna., saved \$400 on fertilizer. "The Kit has paid for itself over and over again." That's real satisfaction!

A.D., Indiana, nearly doubled his corn yields after testing his soil. He also gets 30% more wheat and soybeans per acre.

C.L.B., Mich., says "With our Sudbury Soil Test Kit we quickly found a lack of potash in our orchards."



Hardware, Seed,  
Grain, Fertilizer  
Other Farm Stores—  
Supply This Essential  
Aid to Better Farming

**SUDBURY LABORATORY, Box 83F, South Sudbury, Mass.**  
**World's Largest Makers of Soil Test Kits!**

## Make More Money in 1957!

## TEST YOUR SOIL

Get Top Quality • Faster Growth • Earlier Harvest  
More Bushels or Tons to the Acre  
More Fancy Grade • Highest Prices • Quickest Sales

You'll have bigger crops at lower cost. You can't afford to guess—when poor growth shows you don't have the right fertilizer it's too late! But you can test your soil before you plant and know just how much fertilizer to use, for the biggest crops.

Yearly tests are not enough—your soil is constantly changing—you'll use your Kit all year round. Right away, these easy 10-minute tests tell just how much fertilizer was used up by last year's crops—how much was leached away by heavy rains—how much you need this year.

## EXTRA BUSHELS EXTRA TONS FREE

The bigger crops you get by soil testing really cost you nothing. Taxes, labor, seed, machinery costs, all stay the same, but your income goes way up! Every \$1 you spend on fertilizer will bring back up to \$10 or more. Increasing crop yield can actually give you six times as much profit!

## Save Up to \$15 an Acre on Fertilizer

Don't waste money on wrong fertilizers, or overdoses of lime. A Pennsylvania farmer "guessed" he had to spend \$700 for lime but tests showed not a single field needed any; some already had too much. He not only saved \$700, he got better crops too!

## Easy As Reading A Thermometer

**NO KNOWLEDGE OF CHEMISTRY NEEDED**—So simple anyone can use it. In only 10 minutes (no samples to mail, no waiting for reports) you'll know just how much **nitrogen, phosphate and potash** your fertilizer should contain. Also how much lime is needed (pH). All for less than 10c a test!

## Farmers deLuxe Soil Test Kit

Complete with everything you need for hundreds of tests. More valuable than all your stock and tools! Heavy duty, lifetime welded steel chest with carrying handle, weighs only 12½ lbs. Easy to follow instructions show needs of 225 different crops. **Big value, only \$29.95.**

## SEND NO MONEY

Order today and we'll mail C.O.D. plus postage. Or send check and we'll pay postage, saving you \$1.91 to \$3.55 in postal charges.

**FREE BOOK** Valuable book on farm management, "Our Land and Its Care" included free with all cash orders.

## Better Crops Guarantee

If you don't get bigger yields this year, send your Kit back this fall and we'll refund your money—that's Sudbury's Daring Guarantee!

## BETTER TRIAL

Even after 10 days use, you can return the Kit if not delighted.

## CUT OUT AND MAIL TODAY

**SUDBURY LABORATORY, Box 83F, South Sudbury, Mass.**

Send me the Farmers deLuxe Sudbury Soil Test Kit at the special low price marked below:

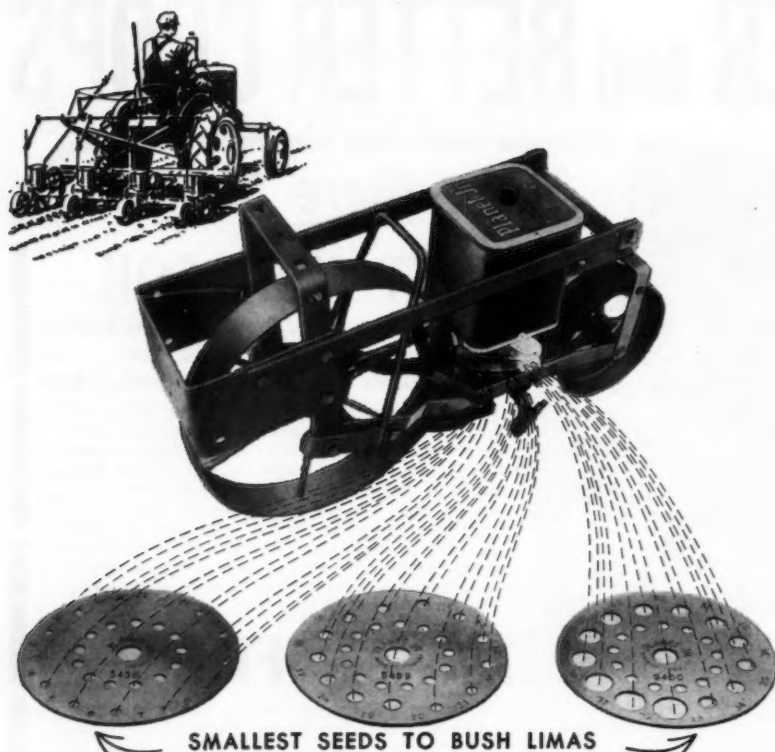
☐ Enclosed is \$29.95; send post-paid and include free book, "Our Land and Its Care." ☐ Send C.O.D. only \$29.95 plus postage.

Name.....

R.D. or St.....

P.O. .... Zone..... State.....

☐ Send on Easy-Payment Plan—I'll pay mailman \$4.95 plus postage, then 4 monthly payments of \$6.75 each.



# Planet Jr.<sup>®</sup> SEEDER UNIT NO. 9192X

... handles over 39 different size seeds  
... with accuracy!

This Planet Jr. Seeder Unit is furnished with *three* seed plates ... giving a selection of 39 hole sizes for planting any size seed from the smallest vegetables to bush limas. It row-plants accurately a prescribed number of seeds per foot. The No. 9192X, like all Planet Jr. seeder units, is easy to clean, easy to fill, and is built for quick changing of seeding plates. It is especially adaptable for use with most general purpose tractors. There is a complete line of Planet Jr. "packaged" seeding attachments available.

## Here are the extras available for Planet Jr. No. 9192X

**PRESS WHEELS**—a wide number of press wheels to choose from—flat, concave, split, open-center and rubber-tired.

**STANDARD**—there is a wide variety available for mounting 9192X seeder to your tool bar—either front, rear or side-offset.

**DRIVE WHEELS**—choose from flat, flanged and furrow-flanged drive wheels—whichever suits your soil conditions best.

**OPENING PLOWS**—a large selection with planting range from 0 to 3½ inches in depth—from 1 to 6 inches in width of furrow.

... finest in the field  
for over 85 years



## WRITE FOR DETAILS TODAY!

S. L. ALLEN & CO., Inc.  
3419 N. 5th Street, Phila. 40, Pa.

Please send me complete details on Planet Jr. 9192X Seeder Unit

Name.....

Address.....

City..... Zone..... State.....

## Answering Your QUESTIONS

Don't let your questions go unanswered. Whether large or small, send them with a three-cent stamp for early reply to Questions Editor, AMERICAN VEGETABLE GROWER, Wiloughby, Ohio.

### SIouxANN TOMATO VARIETY

I would like to know where I can secure seed of the Siouxann variety of tomatoes mentioned in an article in AMERICAN VEGETABLE GROWER.—Oklahoma.

The Siouxann tomato is mentioned in the article, "Chilled Tomato Plants Produce More Early Fruit," by S. H. Wittwer, which appeared in our April, 1956, issue. Seed can be purchased from the Gourney Nursery and Seed Co., Yankton, S. D.

### BUDDINGH WHIRLIGIG WEEDER

Would you please send me the name of the firm that sells the Buddingh Whirligig Weeder.—Minnesota.

The company you want is the Buddingh Inrow Weeder Co., Caledonia, Mich.

### HORSE RADISH ROOTS

I wish to buy several hundred pounds of horseradish roots and around 10,000 small roots or sets for planting. Can you furnish the name of a grower of horseradish roots?—Missouri.

The following names of 15 horseradish growers in New Jersey appeared in our December, 1955, Answering Your Questions column and our February, 1956, Letters to the Editor: Raymond Paterson, R.F.D., Cranbury; Simeon Keisler & Son, R.F.D., Cranbury; Bernard J. Funk, Milltown; Henry Bibb, Wrightstown; Watson VanSciver, Burlington; James Varsaci, Beverly; August VanDessel, 947 Broad St., Bloomfield; Aaron Combee, Hollywood Ave., R.F.D., Caldwell; Lester Haines, 1150 Broad St., Bloomfield; Alois Lebeda, 191 Clinton Rd., West Caldwell; Walter Ellis & Son, R.D. No. 1, Yardville; J. S. Kucowski, R.D. No. 1, Wrightstown; Walter Guzikowski, R.D. No. 1, Wrightstown; E. H. Gancarz, R.D. No. 1, Wrightstown; Alex Lyczak, R.D. No. 1, Yardville. Also try Joe F. Cripe, Walkerton, Ind.; Double You Gee Farms, Inc., Black Creek, Wis., and Clark Seed Co., Cheswold, Del.

### ADVICE ON GREENHOUSE TOMATOES

I have Globe tomato plants in my plastic greenhouse that have bloomed but about 50% have failed to set fruit. What would cause this? I would also like names of some greenhouse strains that set well in cloudy weather and where I can purchase the seed.—Washington.

Globe tomatoes do not do well as a forcing variety in the Pacific Northwest. According to Dr. Chester L. Vincent, professor of horticulture at State College of Washington, from 90 to 95% of all greenhouse grown tomatoes in Washington are the Washington State Forcing variety, seed of which can be purchased from Gill Bros. Seed Co., Montavilla Station, Portland 16, Ore., and from Ferry-Morse Seed Co., Mountain View, Calif.

### JACK O' LANTERN PUMPKIN

My husband has a small truck farm. He heard recently that there is a new variety of pumpkin for Halloween, and appropriately enough, it's called Jack O' Lanterns. If so, can you tell us where we might purchase seed of this variety?—New Jersey.

Try Joseph Harris Co., Moreton Farm, Rochester 11, N. Y., or Northrup, King & Co., 1500 Jackson St., N. E., Minneapolis 13, Minn.

AMERICAN VEGETABLE GROWER



## Your QUESTIONS

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ed of this variety?

Moreton Farm,  
Northup, King &  
E., Minneapolis

ETABLE GROWER

# woodruff seed

FOR A BETTER CROP OF

# Cauliflower



SUPREME SNOWBALL illustrated above

Send for your free copy of  
1957 Market Growers Catalog



## F. H. WOODRUFF & Sons, Inc.

Seed Growers

Milford, Conn.; Bellerose, L.I., Salisbury, Md.  
Atlanta, Ga., Sacramento, Cal., Mercedes, Tex., Toledo, O.

- Woodruff Seed assures you of:
- Large snowy-white heads.
  - Thick compact curds.
  - Ample foliage provides adequate protection against sun and weather.

SUPER SNOWBALL (earliest strain—large frame)	55 days
EARLY SNOWDRIFT (best second—early)	60 "
SUPREME SNOWBALL (excellent main crop variety)	65 "
IMPROVED HOLLAND ERFURT (popular Long Island strain)	65 "

Woodruff Cauliflower Seed is used by leading growers  
in the important Cauliflower Growing sections.

FOR EARLIER CROPS  
USE

## Jiffy-Pots

The Revolutionary New  
Plant Growing Containers



This remarkable new pot is composed of 75% peat and 25% wood fiber and impregnated with 1.3% nitrogen, 1% phosphorus, and 1.6% potash.

Roots grow right through the walls, permitting transplanting outside without removing the Jiffy-Pots. They are inexpensive... lightweight... long lasting... provide excellent root aeration... need less watering... and save considerable labor.

The most striking feature of Jiffy-Pots is the fast premium growth which they support.

### PRICES

2 1/4 INCH	Per 1000
3,000 to 18,000 (3,000 \$21.75).....	\$7.25
21,000 to 72,000.....	6.75
75,000 up .....	6.50
Sold in cases of 3,000. Minimum order 3,000. 35 lbs. per case.	

3 INCH	Per 1000
1,500 to 9,000 (1,500 \$19.88).....	\$13.25
10,500 to 49,500.....	12.25
51,000 up .....	11.25
Sold in cases of 1,500. Minimum order 1,500. 35 lbs. per case.	

F.O.B. our warehouse in West Chicago, Ill., and Bayonne, New Jersey.

We also can supply veneer plant bands and Bird Vita-Bands. Write for prices.



Tomatoes are an excellent subject for Jiffy-Pots. Planted out without any growth check, they will produce earlier.

*Geo. J. Ball*  
I N C.  
WEST CHICAGO  
ILLINOIS

Dept. V3

Phone 299

Tomatoes growing in a Cleveland greenhouse. Greenhouse crops are high-value crops—and smart operators know that it doesn't pay to skimp on fertilizer and take the chance of a loss in yield. Once soil fertility is built up to its optimum level, only small amounts of fertilizer are needed to maintain it at that level.



## How to Fertilize GREENHOUSE SOILS

Greenhouse growers build soil fertility up  
to its optimum level—and keep it there

By G. F. WARREN

Purdue University

**G**REENHOUSE crops are so valuable that fertilizer is a small part of the cost of production. Growers are interested in obtaining the highest possible yield and not in saving a few dollars on fertilizer and taking a chance on losing much more in reduced yields.

In starting with a new greenhouse, enough manure and fertilizer should be applied to bring the soil up to a high state of fertility as indicated by soil tests. Once this is accomplished, small applications only are needed to maintain the supply of available nutrients at that level.

Unfortunately, many greenhouse growers have continued to make heavy fertilizer applications after reaching this point. The result is the accumulation of "soluble salts" in the soil which causes reduced growth and in severe cases even death of the plants.

Usually the only symptoms of soluble salt injury are stunting and uneven growth which makes it difficult to detect until the situation becomes severe. The best method of testing for soluble salts involves measuring the conductivity of a soil extract. With the commonly used 1:2 soil-water extract, a reading of above 180 on the Sol-u-Bridge usually means that crops are suffering and it is best to keep the level well below 150. Nitrate, chloride, and sulfate tests may be helpful in deter-

mining the major source of the trouble.

Since excess salt problems are difficult to correct, careful attention should be given to prevention. Steps that will be helpful are as follows:

1) Avoid the use of fertilizer where soil tests show it is not needed.

2) When fertilizer is necessary, use high-analysis materials spread evenly and do not apply more than is indicated by the soil tests. Some preferable fertilizers are triple superphosphate (0-45-0), monopotassium phosphate (0-52-34), monoammonium phosphate (12-62-0), diammonium phosphate (20-52-0), ammonium nitrate (33-0-0), nitrate of potash (12-0-44), and sulfate of potash (0-0-50). Materials that should be avoided include nitrate of soda, muriate of potash, and mixed fertilizers containing muriate of potash.

Where a soluble salts problem already exists, there are certain steps that can be taken which will help correct the situation.

1) Heavy leaching with water if drainage permits. It is best to do this in the summer so the soil will dry out in a reasonable length of time.

2) Allow soil to dry, concentrating salts on the surface, then remove the top 2 inches.

3) Add organic materials that are low in nitrogen, such as corn cobs, straw, or sawdust, but do not use manure. This temporarily removes

(Continued on page 49)

AMERICAN VEGETABLE GROWER

# Cut your spraying costs!

## the **John BEAN 15-RC AIRCROP** attachment

sprays at rate of  
**24 ACRES**  
per hour



With the John Bean 15-RC Aircrop installed on your high pressure sprayer, you'll spray 60' swaths and do a thorough job at the rate of 24 acres an hour at a 4 mph tractor speed. Just estimate your savings in time and labor over boom-type spraying! Many growers can save the cost of the Aircrop in a single season.

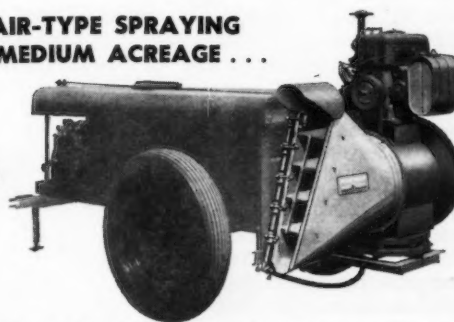
Straight-through delivery of a large air volume at medium velocity is one secret of the Aircrop's phenomenal success. The 15-RC's 29" axial flow fan delivers 31,000 cubic feet per minute, but the

air's velocity is only 70 miles per hour. This, plus the exclusive John Bean design of the Aircrop's discharge head provides uniform spray pattern over entire width of swath.

And see how these other Aircrop features will speed your spraying job: (1) Entire unit rotates in a 200° arc to take advantage of wind direction (2) Rotation and internal deflectors controlled from the tractor seat (3) Water hauling reduced ½ to ¾ by use of concentrates.

**FOR MODERN AIR-TYPE SPRAYING  
OF SMALL TO MEDIUM ACREAGE . . .**

**THE  
ECONOMICAL  
8-RC  
AIRCROP**



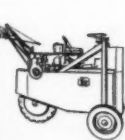
Sprays swath from 30 to 40 feet wide. Has 21-inch axial flow fan and 180° rotation. For attachment to sprayers with pumps delivering 7 gpm or more at 400 lbs. pressure.

There's a John Bean high-pressure, boom type sprayer for every purpose.



4 to 20 row models

All new HI-CROP with 6-ft. clearance for tall crops, adjustable boom heights for any row or field crop.



Write for John Bean Catalog L-1144 and L-1120 today!



**John BEAN**

LANSING 4, MICHIGAN  
SAN JOSE, CALIFORNIA

Division of Food Machinery and Chemical Corporation





#### AMERICA'S NO. 1 SPREADER MAKES FEWER ACRES PRODUCE MORE

With a tighter money situation, you need to make your production acres work harder. Proper application of fertilizer is the best way to increase production.

Ezee Flow can make more money for you by applying your fertilizer accurately, uniformly and economically ...to make your fertilizer dollars go twice as far.

#### EZE FLOW DOES ALL THESE JOBS THE YEAR 'ROUND... FOR MORE SAVINGS

1. broadcasts fertilizer or seed
2. side dresses
3. row or band application
4. top dresses hay or pasture lands
5. fertilizes & sows seeds at same time
6. plants legumes & small grains at same time
7. spreads feeds on poultry range
8. spreads sand, gravel or cinders
9. spreads salt to remove snow
10. spreads materials for dust control

#### FREE PICTURE-PACKED BOOKLET

EZE FLOW Dept. AVG-2

Div. Avco Dist. Corp.  
3428 N. Harlem Ave., Chicago 34, Ill.

Please send me complete information on the Ezee Flow, and my FREE copy of the Ezee Flow Fertilizer Fact Booklet.

Name \_\_\_\_\_

Address \_\_\_\_\_

Town \_\_\_\_\_

State \_\_\_\_\_

## BALANCED DIET

(Continued from page 15)

ters have set is usually sufficient. A couple of years ago this program brought the DeVries a yield of about 12 tons per acre.

Sweet corn is a crop requiring balanced fertilization for top yields. Harold Sweet, of Elyria, Ohio, grows around 125 acres a year and practices seeding rye grass in cornfields in October to supply green manure the next spring. Sometimes he seeds the rye grass in the corn before harvesting with equally good results.

The October rye grass receives an application of 600 to 800 pounds of 10-10-10 per acre at seeding. This gives the cover crop a good start, especially during dry weather in the fall, and makes for heavy green manuring.

At corn planting time Sweet puts 400 to 500 pounds of 5-10-10 per acre in the row. Later he makes side-dressings with ammonium nitrate at rates varying from field to field according to plant growth, previous crop production, or tissue tests of the plant. Rates may go up to 200 pounds per acre.

At Fairacre Farms, Poughkeepsie, N.Y., Ralph Adams plows under rye plus 5 tons per acre of poultry manure for his sweet corn crop. At planting he applies 500 pounds per acre of 5-10-5 or 10-10-10. One side-dressing of 200 pounds of ammonium nitrate per acre is made at the last cultivation. This fertility program boosts yields to 10 to 12 thousand ears per acre on some 40 acres.

Cucumbers get careful attention on the Family Pride Farms, Delmar, Del. The J. Lee Phillips family grows around 18 acres of Santee and Marketer cucumbers under irrigation. Their practice has been to plow under

rye or barley with 5 tons of poultry manure per acre. However, in 1953 they got better yields of quality cucumbers with 700 pounds of 5-10-10 plowed under with the cover crop in place of manure.

At seeding time 600 pounds of 5-10-10 are applied per acre and two side-dressings of 400 pounds per acre of 8-8-8 follow. Then after picking starts, they get a final side-dressing of 400 pounds of 12-12-12 per acre. In 1953 the Phillips harvested 30,000 bushels of cucumbers from 18 acres, a telling story of balanced fertilization.

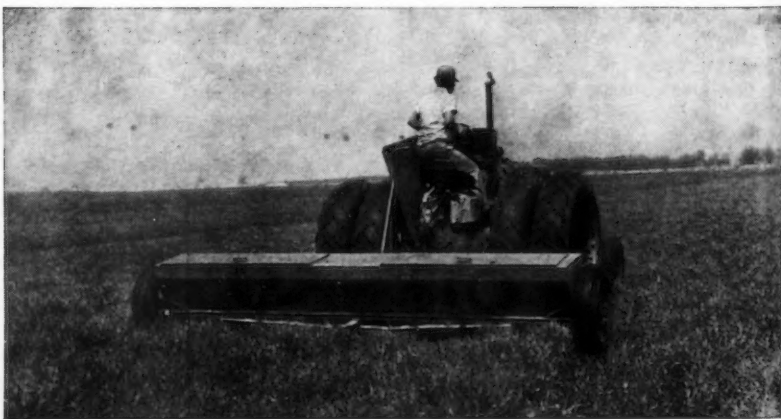
#### Mixes Own Fertilizer

Early cabbage is an important crop in many southern states. Ernest E. Clower, of Crystal Springs, Miss., starts planting cabbage in late January. He mixes his own fertilizer on the farm and figures he saves about \$7.00 per ton. His 6-8-8 fertilizer is plowed down at the rate of 1500 pounds per acre. Later, when temperature is rising and growth becomes active in the young plants, he side-dresses with about 200 pounds per acre of ammonium nitrate. Yields go up to around 7 tons per acre.

Also of Crystal Springs, Roy Smith follows a similar fertilizer program on cabbage as Ernest Clower. However, before setting plants, Smith subsoils to a depth of 12 to 14 inches under each row, to aid root growth and availability of soil nutrients.

This point is clear from our observations: those growers who are balancing up their fertility programs are those who are making the most from their vegetable growing business.

THE END.



Ammonium nitrate is applied with an Ezee Flow fertilizer spreader to rye before plowing under for potatoes at big Gehring Farms, Rensselaer, Indiana. This 5500-acre farm is on mostly muck soil.

AMERICAN VEGETABLE GROWER

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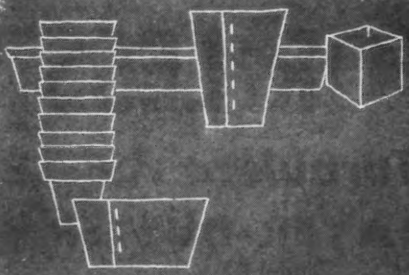
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VEGETABLE GROWER



## The **WHOLE FLOCK** of **BIRDS** can increase **YOUR** income

The whole flock (Bird's complete line of horticultural products) is intended solely to increase your income—by decreasing costs of your present operations, speeding up labor, lengthening your selling season, promoting more luxurious growth. If you now use any Bird products, you know the truth of this statement. But perhaps you haven't tried the *complete* line. Major features are highlighted here. Read all about them. Then, take full advantage of the complete line. Order from your distributor or send coupon for full information.



### **BIRD VITA-BANDS ELIMINATE TRANSPLANT SHOCK**

Bird Vita-Bands contain root growth to transplant stage. Eliminate transplant shock. Crops mature 7 to 10 days earlier. Bands are nitrogen saturated to feed plants. Vita-Band "10" for annual and vegetable plants; Vita-Band "H" for perennials and long-term crops; Vita-Band "D" especially adapted for mechanical transplanting. Eight sizes.



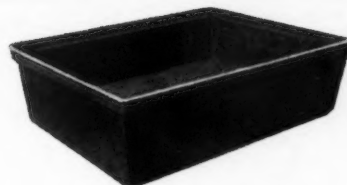
### **BIRD PERENNIAL POTS LENGTHEN YOUR SELLING SEASON**

Lightweight, strong, inexpensive — Bird Perennial Pots keep your plants healthy right up through maturity. You lengthen your selling season from three to five months, 5", 5½", 6½" and 9½" heights for all types of perennials, bulbs, roses and shrubs.



### **BIRD VITA-M POTS ARE LIGHT, INEXPENSIVE**

Only 1/20th the weight of clay pots, Bird Vita-M Pots are low in initial cost; save labor cost by easy handling and by reducing watering frequency; save money on shipping because of light weight; nestle snugly to save storage space. 2¼, 2½, 3, 3½ and 4 inch sizes.



### **BIRD GRO-TAINER PROMOTES VOLUME SALES**

The molded pulp Gro-Tainer flat stimulates retail sales of twelve plants at one time. Plants are grown and sold in same container. Ideal retail display. Twelve holes in bottom for drainage.



### **BIRD VITA-GREEN POTS IDEAL FOR PRIME PLANTS**

Bird Vita-Green Pots disintegrate after they're planted. Eliminate transplant shock. "Vita" nutrient feeds plant. Ideal for prime annuals and vegetables, hybrids, specialties. Easily space out prime plants to allow for heavier top growth. No rootball to remove — no empty pots in transplanting. Contain roots approximately 12 weeks. 2¼, 2½, 3, 3½ and 4 inch sizes.



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Please send me free literature, including prices and growing instructions, on the following:

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| <input type="checkbox"/> Vita-Bands      | <input type="checkbox"/> Perennial Pots   |
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Name .....

Street & No. ....

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# SPRAY FASTER FOR LESS

## BUFFALO TURBINE *Turbulent Air*

The "Stainless Streamliner"

### SPRAYER

Model "H"

The Modern Concentrate Sprayer for ALL

Orchards, Groves and Row Crops

The ONLY Air-Blast Sprayer With EVERYTHING

### WHAT IT DOES . . .

Uses turbulent air to atomize and apply concentrated sprays and/or dust, giving a thorough and wide-ranged coverage never before possible . . . providing a means of quick and thorough application. Is adjustable to give desired degree of agitation to foliage, with enough velocity to completely carry through the tops of trees as well as through row after row of heavy thick leaf cover in row crops.

For Those Who Only SPRAY →



200-GALLON  
STAINLESS STEEL  
TANK

### COMPARE!!

With the Rest

### THEN BUY!

#### The Best

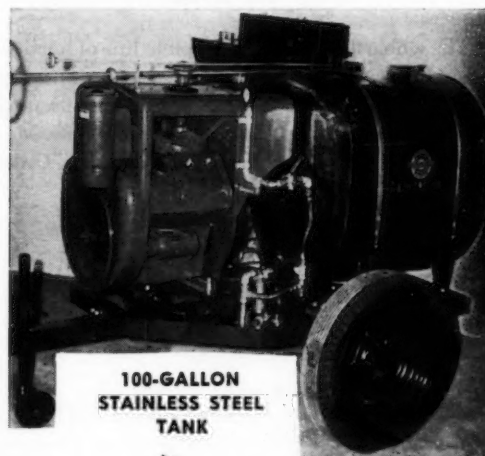
- LOW INITIAL COST
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Write For Literature  
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Some Territories Open  
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### SPRAYER-DUSTER

Model-CS



100-GALLON  
STAINLESS STEEL  
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← For Those Who  
DUST and SPRAY

### CHOICE OF PUMPS

6 to 30 Gal. Per Minute

### HOW IT DOES IT . . .

By using turbulent air as the vehicle, you can distribute insecticides and fungicides in the form of a liquid or dust or a combination of both in any proportion. The use of a combination of dust and "liquid sticker" has never been successfully done before, primarily because the sticker was used as the carrying medium, whereas Buffalo Turbine Sprayer-Dusters use air as the vehicle.

You can vary this blast of air in jet formation from a gentle breeze to a hurricane of 180 MPH. This is why you can get such an extremely long "carry" and also accurate directional control and extreme penetration.



**Buffalo Turbine Agriculture Equipment Co. Inc.**



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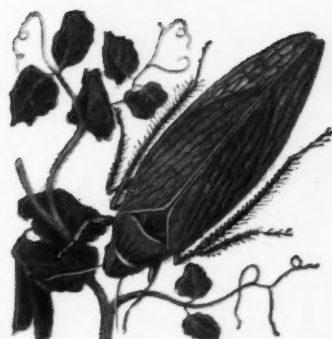
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VEGETABLE GROWER

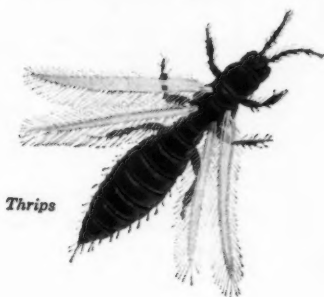


Aphid

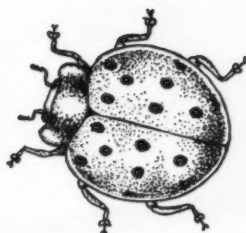


Leafhopper

**Deadly to insects . . .**



Thrips

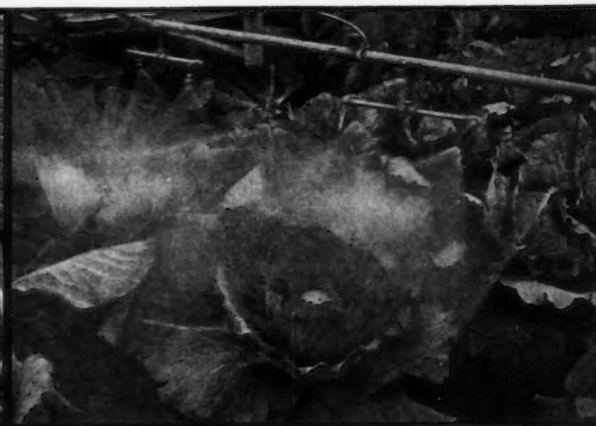


Mexican Bean Beetle



Mite

**offers safety in use . . .  
avoids residue problems**



In 1957, malathion offers  
**more than just insect  
control. Here's how it  
stops the bugs;  
gives your workers  
extra protection; avoids  
residue problems.**

**Malathion kills aphids and mites** as well as beetles, leafhoppers, thrips, other major pests on 47 crops. It's the basis for a *complete* insect control program. Malathion's compatibility with other insecticides lets you add whatever material is necessary for special problems.  
**Offers safety in use** — Malathion is the *only* phosphate insecticide that makes safe handling easy. Precautions necessary are similar to those for DDT. Respirators, special protective clothing, are *not* required.

**Spray most crops as close as 72 hours from harvest** without residue problems. Because malathion is *low* in toxicity to man and animals, it has a high residue tolerance . . . the *only* phosphate that does. And, residues disappear rapidly.  
**Free Grower's Guide**—Write American Cyanamid Co., Agr. Chem. Div., Dept. VI, 30 Rockefeller Plaza, New York 20, New York.

**CYANAMID**

**MALATHION**

**insecticides have many uses on every kind of farm**

FEBRUARY, 1957

35



## when you add TRIANGLE BRAND COPPER SULPHATE to your fertilizer.

Vegetables rich in minerals cannot be grown in copper-deficient soil. In addition, they are less appetizing and thus do not appeal to the consumer. Proper dosages of Triangle Brand Copper Sulphate—added to your fertilizer—will provide this vital soil mineral. More abundant growth of healthier and more flavorful vegetables is assured with use of copper sulphate in your fertilizer. This results in higher market values and greater profit. Don't forget to use Copper Sulphate in Bordeaux sprays and dusts for dependable control of common vegetable diseases.



**PHELPS DODGE**

REFINING CORPORATION

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Control  
POND SCUM  
and ALGAE in farm  
waters with Triangle Brand  
Copper Sulphate. FENCE POST  
Treatment with Triangle Brand  
Copper Sulphate prevents  
decay and termite damage.

Send today for information  
on these important  
uses of copper  
sulphate.

## Make Reservations Now for March Issue All About Tomatoes

### FERTO-POTS

Millions Used  
Plant Eats Pot



Made with rich rotted  
COW MANURE. Start  
seeds, bulbs, plant in  
FERTO-POTS indoors.  
Transplant POT and all  
when ground is ready. No  
setback, grow two or  
three crops per year off  
the same ground.

(charges col.)	(prepaid)	(charges col.)	(prepaid)
100	\$2.25	\$2.80	\$3.25
100	\$2.25	\$2.75	\$3.20
100	\$2.30	\$3.25	\$4.25

**ALLEN COMPANY**

Since 1915

Pittstown 11, N.J.

### MORE AND BETTER POTATOES

Activo is Nature's own way of energizing soil for  
best crop yields with billions of friendly organisms,  
hormones, vitamins, minerals, BIOTIN. (Users re-  
port "Better than fertilizer!") Just apply to seed.  
More bigger, better potatoes or your money back.  
Trial pkg. for 9-18 bu., \$2.95 p.p.d. Dealers or  
**THE ACTIVO COMPANY, Bridgeton 43, Ind.**

### RHUBARB ROOTS VALENTINE & MACDONALD

Hardy Northern Grown Plants

Write: E. D. Troup

Jordan Station, Ontario, Canada

EARLY SPRING DELIVERY

Wholesale Only

## CALENDAR OF COMING MEETINGS AND EXHIBITS

Feb. 4-6—Ohio Vegetable and Potato Growers  
Association, 42nd annual meeting, Netherland  
Hilton Hotel, Cincinnati.—E. C. Wittmeyer, 210  
Horticulture Bldg., Ohio State U., Columbus.

Feb. 4-6—Fieldmen and Processors Conference,  
Kellogg Center for Continuing Education, Mich-  
igan State University, East Lansing.—S. K.  
Ries, Sec'y, East Lansing.

Feb. 4-9—Food Processors' Workshop, Univer-  
sity of Maryland, College Park.—A. A. Duncan,  
Ext. Veg. Crops Specialist, College Park.

Feb. 5-7—New Hampshire State Horticultural  
Society meeting, Highway Motel, Concord. Feb.  
5—Fruit program; Feb. 6—Vegetable program;  
Feb. 7—Potato program.—E. J. Rasmussen,  
Sec'y, Durham.

Feb. 7-8—Wisconsin Vegetable and Potato  
Growers meeting, Babcock Hall, University of  
Wisconsin campus, Madison.—John A. Schoen-  
emann, U. of Wisconsin, Madison 6.

Feb. 7-8—Wisconsin Muck Farmers' Associa-  
tion annual meeting, held during Farm and  
Home Week, University of Wisconsin, Madison.  
—John A. Schoenemann, U. of Wisconsin, Mad-  
ison 6.

Wisconsin potato meetings: Feb. 12—Spoon-  
er; Feb. 13—Rhinelander; Feb. 14—Antigo.—John A.  
Schoenemann, U. of Wisconsin, Madison 6.

Feb. 12-14—Technical School for Pickle Manu-  
facturers, Kellogg Center for Continuing Educa-  
tion, Michigan State University, East Lansing.  
—S. K. Ries, Sec'y, East Lansing.

Feb. 19-20—Greenhouse vegetable growers con-  
ference, Ohio Agricultural Experiment Station,  
Wooster, Ohio.—E. C. Wittmeyer, Sec'y, Ohio  
State U., Columbus.

Southeastern Wisconsin vegetable grower meet-  
ings: Feb. 20—Milwaukee County Agricultural  
Agent's office; Feb. 21—Racine.—John A. Schoen-  
emann, U. of Wisconsin, Madison 6.

Feb. 25-27—Indiana Cannery and Fieldmen's  
Conference, Purdue Union Bldg., W. Lafayette.  
—F. C. Gaylord, Sec'y, Lafayette.

Oct. 9-11—Florida Fruit & Vegetable Associa-  
tion 14th annual convention, Hotel Fontaine-  
bleau, Miami Beach.—Florida Fruit & Vegetable  
Assoc., 4401 E. Colonial Drive, Orlando.

## TALL PLANTS

(Continued from page 12)

eral nutrition. Maximum yields of  
treated crops will not result, except  
where adequate fertility levels in the  
soil are maintained.

For many of the flowering and  
vegetative responses described, re-  
peated treatments with the chemical  
are essential. In others a single dose  
is sufficient.

Crops may be treated at various  
stages of development, but as the  
plant matures, the response to a given  
dosage decreases.

The only source of the chemical  
now is the disease organism from  
which it derives its name. It probably  
occurs naturally in many vegetable  
crops. Three large producers of anti-  
biotics (Merck & Co., Eli Lilly &  
Co., and Chas. Pfizer & Co.) now  
have small quantities available for re-  
search purposes.

Much detailed and extensive field  
testing is needed before vegetable  
growers will realize the full benefits  
of gibberellic acid.

THE END.

AMERICAN VEGETABLE GROWER

## COMING EXHIBITS

and Potato Growers  
Meeting, Netherlands  
C. Wittmeyer, 210  
U., Columbus.

ensors Conference,  
Education, Mich.  
Lansing.—S. K.

Workshop, Univer-  
—A. A. Duncan,  
College Park.

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vegetable program;  
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Feb. 12—Spooners;  
Antigo.—John A.  
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## ENTS

(page 12)

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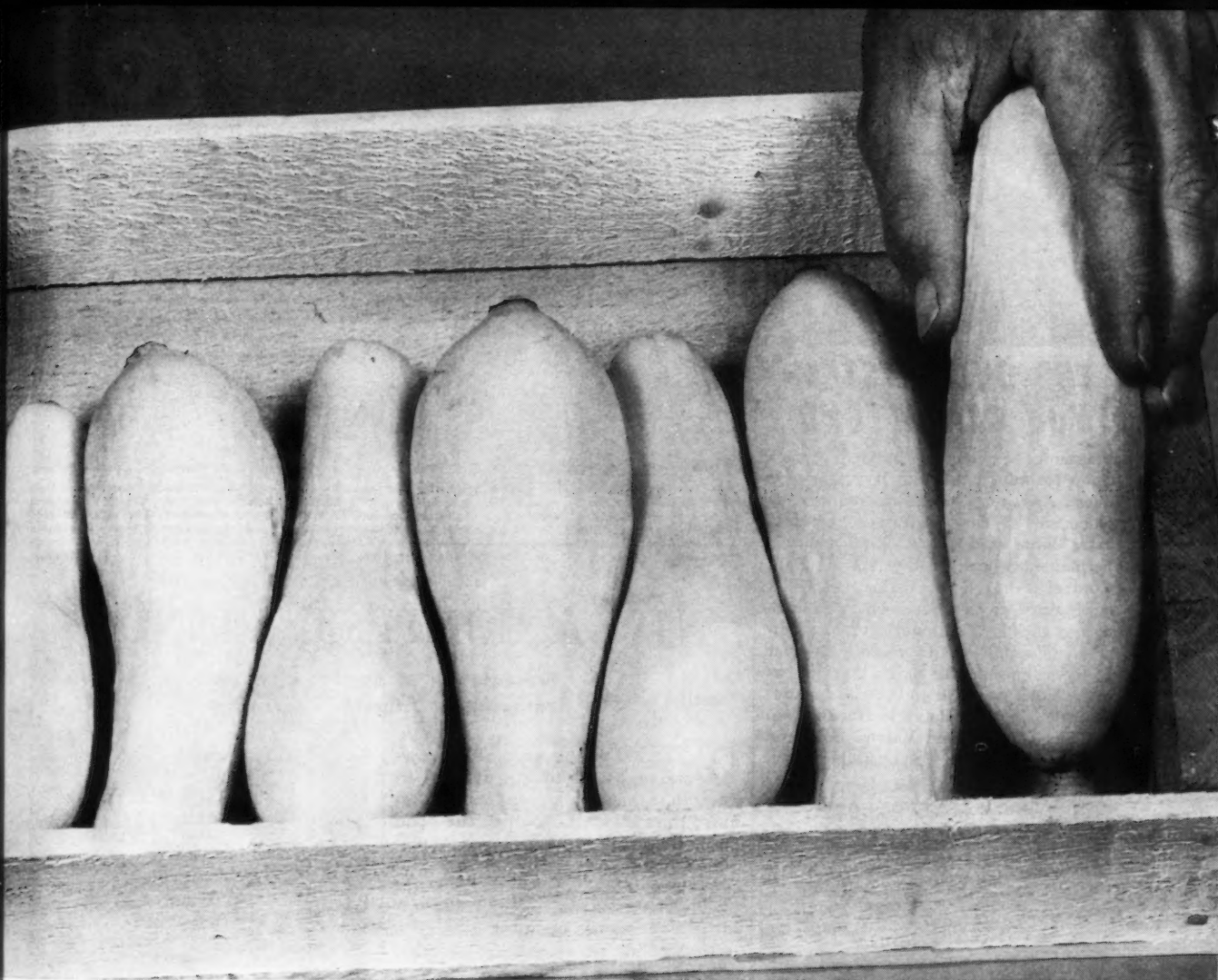
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TABLE GROWER



Ferry-Morse Early Prolific Straightneck Squash packs better for shipping.

## TAILOR-MADE FOR STRAIGHT, SMOOTH FRUITS

### Early Prolific Straightneck Squash

This high-yielding summer squash with no crook was tailor-made by Ferry-Morse breeders. Its delicate, creamy color and smooth, straight fruits are ideal for home, market garden and shipping. Compact bush plants permit close planting; fruits are firm and usable at 3 to 5 inches long, and tender up to 12 to 14 inches long.

This variety packs better and is more attractive than Yellow Summer Crookneck. Order seeds now from your dealer.

## FERRY-MORSE SEED CO.

Detroit, Mich. • Mountain View and Los Angeles, Calif.  
Memphis, Tenn. • Harlingen, Texas, • Tampa, Fla.



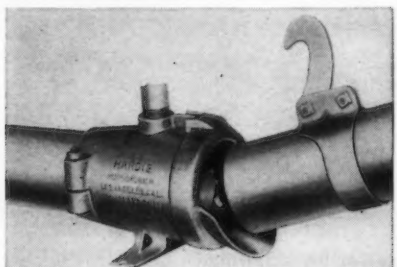
**TAILOR-MAKING**—Ferry-Morse's scientific plant breeding develops varieties best suited to your specific uses and growing conditions. Shown here is the process of cross-pollinating squash—a step in producing vegetables tailored to your exact needs.





## THE ONLY SYSTEM YOU CAN AFFORD

Maximum benefits of sprinkler irrigation come to only those who buy the very finest. Anything less means frequent replacement expense, high operating cost, extra labor and waste. You make it permanent when you buy Hardie Rain Control Portable Sprinkler Irrigation equipment. It pays for itself. You have money to buy additional equipment instead of replacements. Hardie Coupler is the strongest ever built. You get exclusive design and high precision manufacturing in every detail in Hardie Rain Control Coupler and Valves. Sold and serviced by strong, responsible dealers.



### NOTE THESE FEATURES:

- Entire coupler made of S-356T6 High Strength aluminum alloy. It is the strongest coupler by any test.
- A 2-bolt clamp is cast integral with coupler. Easily and quickly attached without pipe damage.
- Both semi-permanent, and quick detachable automatic coupling is provided by two slots for steel hook on pipe.
- Sturdy foot is slotted for bolt or screw.
- The very finest interior finish on coupler and valves assures the minimum of flow resistance.
- Design features eliminate surging.

**HARDIE**  
RAIN CONTROL

portable sprinkler  
irrigation systems

THE HIGH QUALITY LINE

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The coveted Snyder trophy was won by the Judging, Grading, and Identification team from New York. Members of the team and their coach were, left to right, Robert Blatchley, Cortland, coach; Merwin Young, Cortland; Dwain Francis, Moravia; and Otis Young, Jr., Cortland. The oak and gold plaque is a presentation of Grant B. Snyder (extreme right), adult leader of National Junior Vegetable Growers Association. The plaque must be won three consecutive times before it becomes the property of a school, club, or team. This is the first time the New York team has won the trophy.

## NJVGA CONTEST WINNERS

Presentation of awards climaxes  
enthusiastic Atlanta Convention

OVER 300 young vegetable growers, ages 14 to 20, arrived in Atlanta, Ga., last December 9 from more than 20 states to open the 22nd annual convention of the National Junior Vegetable Growers Association. For five days they talked, put on demonstrations, judged vegetables, conducted business sessions, toured points of interest in Atlanta.

Three great contests culminate during this convention and the winners receive their awards at the annual banquet. These contests include: 1) Production and Marketing; 2) National Demonstration Contest; and 3) National Judging, Grading, and Identification Contest.

In the Production and Marketing Contest two national awards are presented, one to the outstanding young grower of fresh market vegetables and the other to the outstanding grower of canning crops. A third award was given in this contest for the first time this year, and it was



John Porter, Ithaca, N. Y., was elected president of NJVGA during convention in Atlanta, Ga., December 9-13. He had been vice-president.

in the sub-section on Soil Fumigation. These winners were selected before convention time, according to their leadership in home communities as well as to their production and marketing skills.

On Wednesday and Thursday of the convention the 14th Annual Demonstration Contest was completed, with a total of 38 entries challenging for first place. Demonstrations depicted almost every phase of 1) production; 2) soil fertility and improvement; 3) marketing; and 4) the use of vegetables.

The 22nd annual Judging, Grading, and Identification Contest on Thursday found a majority of the young conventioners taking part. Contestants had to judge three classes of 11 plates each of various vegetables, grade 100 specimens of potatoes, and identify 100 specimens of diseases, insects, variety types, weeds, nutrient deficiencies, and grade defects, of a variety of vegetables.



The first Grand National Champion Award ever presented by NJVGA was won by Betty Lou King, Caro, Mich. Prof. Grant Snyder, national chairman of NJVGA, is shown conferring the award.

AMERICAN VEGETABLE GROWER



on team from New  
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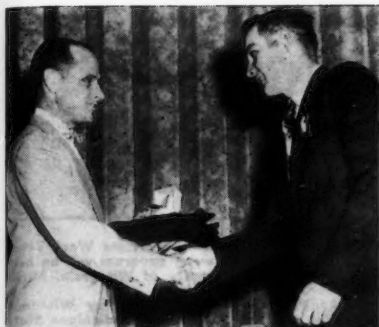
## WERS



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Blanchard Verzwylt, Alexandria, La., top  
award winner in the fresh market section of the  
Production and Marketing contest, receives con-  
gratulations from Dr. Joseph Campbell of the  
Olin Mathieson Chemical Company. Blanchard  
produced and sold \$1207 worth of vegetables  
from one acre of his father's 27-acre farm.  
His net profit was \$952. Guided by soil tests  
made through his county agent, Blanchard ap-  
plied animal manure and fertilizer, rotates his  
plot and uses a cover crop where possible.



Gary Marlin Bishop (right), Mt. Blanchard, Ohio,  
is shown receiving the national canning crops  
award in the Production and Marketing Contest  
from Charles H. Mahoney, director, Raw Pro-  
ducts Research Bureau, National Canners Asso-  
ciation, Washington, D. C. Award included \$50 cash  
prize, gold wrist watch, maroon NJVGA jacket,  
10k gold NJVGA pin, purple rosette ribbon, and  
a paid trip to Washington, D.C. Gary won  
with 5.17 acres of tomatoes that averaged  
18.26 tons per acre. Award is given on outstand-  
ing leadership as well as production skills.



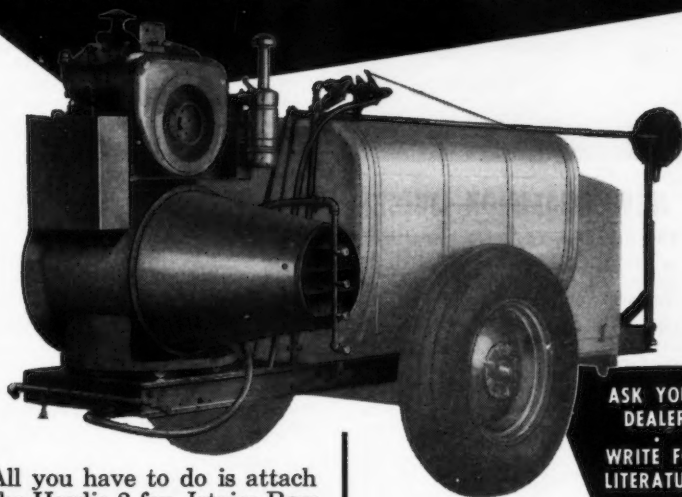
New in the 1956 contests was the soil fumigation  
award in the Production and Marketing Contest,  
won by Paul M. Wester, Beltsville, Md. (right).  
He is shown receiving his prizes from Thomas  
J. Page, The Dow Chemical Co., Midland, Mich.



Top winners in the national Demonstration  
Contest—Sam Strickland (left), Summersville,  
and Joel Lee Groves, Canvas, W. Va.—  
were presented their awards by Robert W.  
Paulson, University of Maine, Orono. "Get  
Those Strawberries There" was the title of  
their demonstration, in the marketing division.

FEBRUARY, 1957

# NOW— YOU CAN MAKE YOUR OWN ROW CROP SPRAYER



ASK YOUR  
DEALER  
WRITE FOR  
LITERATURE

- All you have to do is attach the Hardie 2-fan Jetaire Row Crop attachment to the frame of any sprayer. It comes complete with a heavy duty air cooled engine and controls.
- Covers 10 to 14 rows of potatoes, tomatoes, etc. with a controlled blanket of mist. Sprays 100 to 120 acres per day.
- High velocity air—15,000 cfm—from two, 26 inch axial flow fans puts the spray where you want it, regardless of wind.
- Air discharge opening rotates through 220 degrees, giving absolute direction control and complete coverage on any kind of ground. You can spray wherever crops can grow.
- Easy reach controls at tractor seat.
- Adjustable air outlet in discharge housing provides control of air on plants close to sprayer.



The Hardie Jetaire Row Sprayer Model DF-20A embodies the 2-fan Jetaire assembly in a complete unit on rubber tired wheels, with 300 gallon steel tank and 134 cu. in. engine.

**HARDIE**

PEST CONTROL EQUIPMENT

portable sprinkler  
irrigation systems

The HIGH QUALITY Line

ALL  
OVER  
THE  
WORLD

The Hardie Mfg. Company, Dept. AV  
Hudson, Michigan

Please send me

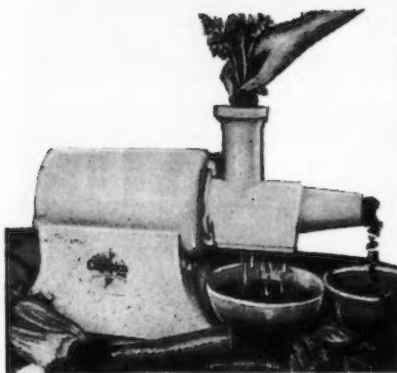
☐ Jetaire literature. ☐ Have salesman call.

NAME \_\_\_\_\_

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CITY \_\_\_\_\_ STATE \_\_\_\_\_





## THE NEW CHAMPION JUICER

Is The Sunshine to Better Health

Three in one, for the price of one. JUICES ALL: Leafy and root vegetables—Carrots, celery, spinach, endive, parsley, etc.

A VEGETABLE GRATER: In seconds you can grate beets, turnips, carrots, coconuts, and nuts for tasty salads, spreads, etc.

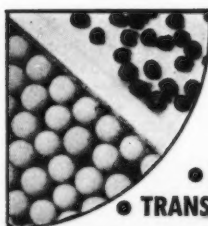
AS A HOMOGENIZER: It is outstanding for nut butter sherbets from frozen fruits, purees, baby foods, homogenizes vegetables.

NO nuts, bolts or screws needed to assemble or disassemble, very easy to clean.

Price completely equipped with 1/2 H.P. G.E. special built motor, 60 cycle 115 V; 5 year service guarantee; instruction book with recipes including the three in one feature for only \$160. F.O.B. factory.

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639 E. Lockeford St., Lodi, Calif.



# SAVE!

- SEED WASTE
- LABOR COST
- THINNING COST
- TRANSPLANTING COST

INCREASE MARKET TOPPING  
ROW CROP YIELDS with

## FILCOAT\* COATED SEED

THE ANSWER TO PRECISION PLANTING

**FREE!** The Amazing Story of  
FILCOAT Coated Seeds

New comprehensive folder complete with planting suggestions, illustrations, and charts showing how FILCOAT Coated Seeds save labor cost, thinning cost, transplanting, and seed waste, and give Increased Premium Quality Row Crop yields—such as Lettuce, Cabbage, Cauliflower, Carrots, Tomatoes, Peppers, Broccoli, and Onions. More Profit for You with FILCOAT Coated Seeds.

WRITE FOR YOUR COPY NOW!



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P. O. BOX 3233  
LOS ANGELES 54  
CALIFORNIA

## STATE NEWS

(Continued from page 18)

ance that the 1956 bean pack was the largest on record but that in the coming year there would be a 15% reduction, with a possible reduction for the following year. He urged members to "strive to harvest a better grade bean," and assured them that the only oversupply was in the larger beans, the smaller size was "moving along nicely."

Earl Stonebrook, of Independence, was named president of the co-operative, with Victor Haffner, Harrisburg, as vice-president. Junior Eckley was retained as executive secretary.—Harold and Lillie Larsen.

### Virginia Plan

IOWA—"The present soil bank law discriminates against vegetable farmers and offers little of value to any farmer except those producing the basic commodities," declared W. F. McCaleb, Jr., executive vice-president, Association of Virginia Potato and Vegetable Growers, Belle Haven, Va., as he spoke at the Iowa Vegetable Growers Association annual convention held recently in Mason City.

Mr. McCaleb discussed the "Virginia Plan," a new soil bank proposal quite different from that now on the law books.

### It's A Beauty!

WISCONSIN—G. H. Rieman, University of Wisconsin potato breeder, reports that one of the Badger state's newest potatoes—Red Beauty—did well wherever it was grown last season. In yield it did as well as Triumph and Irish Cobbler, and the new variety is equal to Cobbler and better than Triumph for cooking quality.

Red Beauty excels other varieties in red skin color, and few varieties grown in the state equal it for smoothness and fine shape. Red Beauty often comes out of the field

with no cull potatoes. Rieman considers it the leading show potato in the country.

Seedmen should have a supply of the seed this year.

Wisconsin's 1957 Farm and Home Week Vegetable and Potato Growers' program will be held in Babcock Hall, University of Wisconsin, Madison, February 7-8.

In addition to the many talks by Wisconsin vegetable experts, S. K. Ries, of Michigan State University, East Lansing, will discuss chemical weed control in vegetable crops. A panel discussion by growers on potato harvesters will be another highlight of the meeting.

The annual banquet will be held at the Park Hotel on the 7th.—John A. Schoenemann, Madison.

### Dip Prevents Radish Disease

FLORIDA—To prevent the development of pitting disease of radishes dip them for five minutes before bagging in a weak solution of the antibiotic Terramycin (10 parts of Terramycin per million of water). This was the report of Florida plant pathologist R. S. Cox to a group of fellow scientists at the recent American Phytopathological Society meeting in Cincinnati.

Dr. Cox said the disease developed when radishes from southeastern farms were shipped in cellophane and plastic bags, that it is the direct result of modern marketing methods.

Infected radishes can become so badly damaged that within two to five days after packing they are unmarketable. However, by dipping the radishes in the Terramycin solution at the packing house, the development of pitting symptoms can be prevented even when radishes are stored at temperatures as high as 86° F.

## Know Your . . . VEGETABLE SEEDS

By VICTOR R. BOSWELL

U. S. Department of Agriculture

### CELERY

CELERY seed is by far the smallest of the vegetable seeds, averaging about 1 1/4 million seeds per pound. Carrot seed is three times as big and lima bean 3000 times as big! A celery plant gives perhaps the greatest increase of seed of any common vegetable, up to 100,000 seeds or more per plant.

Although celery is of major commercial importance in this country (35,000 to 40,000 acres annually), only 20 to 40 acres are needed each year to produce our seed requirements. In recent years production has varied widely, from about 11,000 to 37,000 pounds annually and yields per acre from 500 to nearly 1000 pounds of seed.

Celery seed is produced mainly in the warm interior valleys of California and in Michigan, with smaller amounts in Idaho, Utah, and elsewhere.

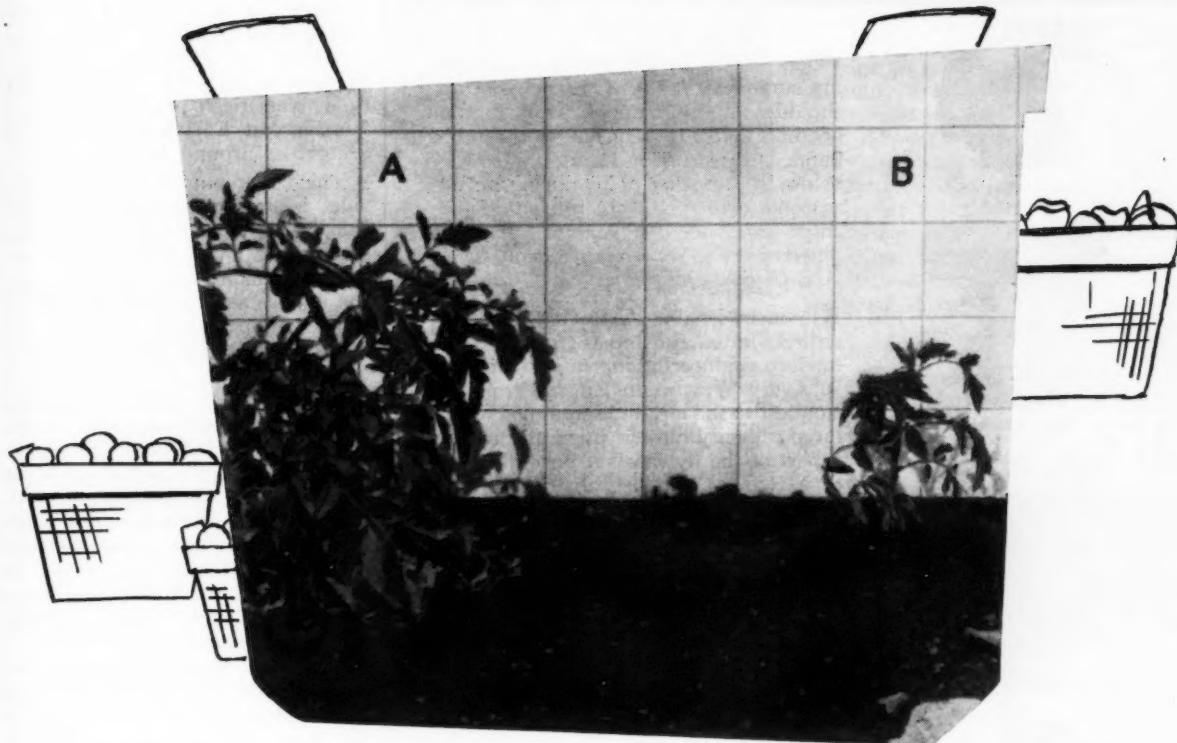
For seed production celery is handled as a biennial crop. Selection of parent plants for conformity to varietal standards is very important. In the mild seed-growing districts of the West the seed is sown in summer, and the mother plants are selected and transplanted to the seed field during the winter and left in place with no protection against cold at any time. In districts having cold winters the seed is sown in the spring, the plants are dug in the fall, and selected mother plants are kept over winter in covered trenches or in cool



cellars. In the spring the mother plants are transplanted to the seed field. Celery plants must be chilled to 40° to 50° F. for several days to induce the initiation of flower stalks, which later develop under favorable growing temperatures.



# to get your produce to market first...



## give your transplants a good toe hold with **TAKE-HOLD (10-52-17)**

Tomatoes, cauliflower, cabbage, sweet potatoes, peppers and other vegetables grow *faster...yield more...* when you treat them with "Take-Hold" (10-52-17) at set-out time.

Photo above taken by the N.Y. Agricultural Experiment Station 3 weeks after transplanting tomatoes shows how plants take hold when treated with "Take-Hold." Plant A was treated with  $\frac{1}{2}$  pint of "Take-Hold" solution; plant B received  $\frac{1}{2}$  pint of water *only* at set-out time.

### Only "Take-Hold" Gives You These Head-Start Advantages

1. Plants get "set" faster...resume growth quicker...help you get crops to market in advance of regular season.
2. Fewer plant replacements...savings on labor alone should pay for "Take-Hold."
3. Plants mature earlier...com-

mand in-advance-of-season prices.

4. Plants bear longer...yield more.
5. Easy and economical to use...completely and instantly soluble (3 pounds to 50 gallons of water); no sludge to clog equipment; no settling tanks needed; no odor.

### Tomato yields—average 4 varieties Courtesy Michigan State University

Nutrient	Early Tons/A	Early Tons/A Gain	Total Tons/A	Total Tons/A Gain
Water Only	7.1	..	16.4	..
"Take-Hold"	11.6	4.5	21.1	4.7

### See the difference in yield

Order TAKE-HOLD (10-52-17) now!

Write to:

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Sieman considers it  
in the country.  
a supply of the

and Home Week Vege-  
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# **EDS**



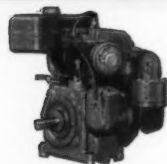
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VEGETABLE GROWER

FEBRUARY, 1957

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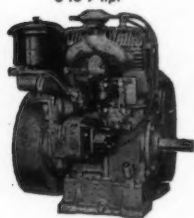
# do it with *Air-Cooled* WISCONSIN ENGINE POWER



4-cycle Single Cyl.  
2.3 to 6.8 hp.



Single cylinder  
6 to 9 hp.



2-cylinder  
7 to 15 hp



V-type 4-cylinder  
15 to 36 hp.

When water boils away under a scorching summer sun . . . if the temperature should go up to an unbelievable and unbearable 140° F. — or if, on the other hand, it should drop to minimums way below the freezing point during an unseasonal cold spell — *there would be no cause for concern if your equipment is powered by a Wisconsin Heavy-Duty AIR-COOLED Engine!*

Wisconsin Engine AIR-COOLING is entirely automatic and as trouble-free as modern engineering ingenuity can make it. Every Wisconsin Engine from the smallest to the largest is equipped with a large capacity blower, integrally cast as a part of the flywheel. A powerful blast of AIR is continuously distributed over the closely-finned cylinder heads and walls by means of scientifically designed and placed air shrouding, providing correct heat dissipation at all temperatures up to 140° F.

In addition Wisconsin basic High Torque design and heavy-duty construction are assurance of steady-going operating dependability, low-cost maintenance and efficient, economical performance. All models can be equipped with electric starter and generator, or starter only, as original equipment.

There is no more rugged engine built, in a 3 to 36 hp. range, than a Wisconsin "AIR-COOLED" — which is a good reason why YOU should specify Wisconsin Power for your equipment. Write for "Spec" bulletin S-188.



## WISCONSIN MOTOR CORPORATION

World's Largest Builders of Heavy-Duty Air-Cooled Engines  
MILWAUKEE 46, WISCONSIN

### THE ALL NEW 1957 CHART

#### Bigger and Better

- Compatibility of Growth Regulators
- Many of the New Organic Chemicals and Fungicides Never Listed Before are Included
- Compatibility of Nutrient Sprays
- New Larger Illustrated Chart—Easier to read.

### WHAT'LL IT MIX WITH?

Larger and completely revised for 1957. For economical and safe spraying, the compatibility of the various organic insecticides and fungicides is a must. AMERICAN VEGETABLE GROWER has again produced an ingenious spray compatibility chart which tells the grower at a glance just what chemicals will mix safely. Printed in 3 colors and mounted on Bristol board, it will guide you through the spraying season ahead.

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Enclosed is money or my check. Send Compatibility Chart to:

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Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_

## CENTRAL VALLEY

(Continued from page 17)

shipper-owned packing houses mostly in 20-pound lugs. The Visalia growers largely pack their own produce. It is marketed primarily on the West Coast, but under favorable price conditions may be shipped to eastern markets. The Earliana-type varieties predominate near Visalia, but Earlypak and Pearson are grown around Merced.

The fall tomato deal of the "west side" is strictly a green-wrap operation. The crop is direct-seeded in early June and handled in as economic a manner as possible, much the same as cannery production. Large shippers contract with individual growers for this large acreage operation.

An attempt is made to time maturity just after eastern production slacks off, usually around September 15. This brings a period of higher prices in the East, compensating the Western shipper for the high freight costs. This shipment continues until extended cool weather chills the fruit, which interferes with proper ripening. Pearson and Earlypak varieties are used for this crop.

**Tomatoes, Processing**—Over 60% of the nation's cannery tomatoes are produced in the tri-county area of San Joaquin, Sacramento, and Yolo. San Joaquin leads the nation in the production of tomatoes, and Yolo County is second.

This production is influenced by two conditions. First, cool marine air from the Pacific moves through the San Francisco Bay at night and fans out over the valley for a distance of about 50 miles. This breeze cools night temperatures to a point where fruit set is prevented until the latter part of June. By this time large vine growth has been attained, and when temperatures finally warm up, a large number of fruit is set at one time.

The second reason for this concentration is that the fruit of the Pearson variety has the unusual ability of remaining ripe on the vine for as long as 30 days. This enables a fewer number of harvests of large tonnages of fruit than is possible in other important canning tomato producing states. As a consequence, production costs and the contract price are lower than in other growing areas.

The average yield of canning tomatoes for the state is over 17 tons per acre, and many growers frequently harvest over 40 tons. Smaller acreages of "pear" tomatoes such as San Marzano and Red

AMERICAN VEGETABLE GROWER

# VALLEY

(page 17)

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ETABLE GROWER

Top are grown in the same area for  
paste and puree processing.

**Melons**—Due to the usual high  
summer temperatures of the valley,  
only a few of the more heat-resistant  
crops can be successfully grown in  
many areas. Muskmelons have been  
found to do well under these condi-  
tions, and over 26,000 acres of can-  
taloupes and about 6000 acres of  
Honey Dew and Persian melons are  
grown in the valley.

Fresno County leads in cantaloupe  
production with large acreages also  
being grown on the west side of  
Merced and Stanislaus counties. The  
Patterson area of Stanislaus County  
is the center of one important Per-  
sian-Honey Dew growing area, the  
other being in the Yolo-Woodland  
area of Yolo County. These melons  
are marketed all over the United  
States, and their high quality com-  
mands top prices.

**Watermelons**—The watermelon is  
another heat-resistant crop well-  
adapted to certain areas of the state.  
The production of this crop is pri-  
marily concentrated in the lighter  
soils along the San Joaquin River  
and in the southern part of the  
valley.

People who have tasted both, say  
that the Klondike-type melons



Honey Dew melons moving from the washer to the  
packing house near Patterson, Stanislaus County.

grown in the valley far exceed in  
flavor melons grown in the southern  
United States, but the tender rind  
prevents shipping them any great  
distance. Breeding work now under  
way in the state is incorporating the  
rind toughness of Ironsides into the  
flesh of the Blue Ribbon in an effort  
to overcome this disadvantage.

**Asparagus**—San Joaquin County  
produces more asparagus than all  
the rest of the nation combined. The

acreage hovers near 55,000 and this  
figure has remained constant for a  
number of years. Production was  
formerly confined to the peat soil  
of the Delta, but due to Fusarium  
wilt, asparagus cannot be replanted  
in the same field until a number of  
years have elapsed. This has neces-  
sitated the gradual dispersal of this  
acreage to mineral soils in the sur-  
rounding area, since practically all  
of the land in the Delta has at some  
time or other been planted to aspara-  
gus.

Row plantings are often spaced 7  
feet apart to enable high ridges to  
be thrown up for part of the season  
to produce white spears for canning.  
Most fields are planted to some  
strain of Mary Washington, but im-  
proved strains recently introduced  
by the University of California are  
now being planted. These are Cali-  
fornia 500, 500W, 309, and 711.

**Onions**—Nearly 6000 acres of  
onions are grown in the valley. This  
production is concentrated in San  
Joaquin County near Stockton, in  
Kern County near Shafter, and in  
Yolo County near Clarksburg. Other  
areas contribute smaller acreages.  
Two different crops are usually pro-  
duced, one being harvested in late  
(Continued on page 50)

## Burpee Hybrid Cantaloupes



So High in Quality They Are Featured on the Menus  
of a Famous Internationally-Known Restaurant in  
New York City

*Praised by Garden Editors, Food Editors,  
Market Growers, Plant Growers*

The handsome fruits make a tempting market display. The quality is so  
high and the flavor so delicious, market growers have reported demand  
at prices three times as high as prevailing price per lb. Heavily netted,  
distinctly ribbed. Thick, deep orange flesh. 7 in long, 4 to 4½ lbs. each.  
Their hybrid vigor gives heavier yield, early production (first picking  
in 82 days), and disease resistance. Growers wholesale prices: 1 oz.  
\$4.25; ¼ lb. \$12.50; 1 lb. \$35.00.

**FREE!** Mail Coupon below TODAY  
and we'll send you a 75c Trial  
Packet FREE, to try.

W. ATLEE BURPEE CO., 972 Burpee Bldg.  
Philadelphia 32, Pa. or Clinton, Iowa or Riverside, Calif.

☐ Send 75c Trial Packet  
Burpee Hybrid Cantaloupe Seeds **FREE**

☐ I am ready to plant a crop and make more money on  
melons. Send \_\_\_\_\_ (quantity)  
Burpee Hybrid Cantaloupe  
Seeds. Enclosed is \$\_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_

☐ Send Burpee 1957 Blue List—wholesale prices on  
Vegetable and Flower Seed for Market Growers.

You'll also get bigger profits from growing the famous  
Burpee Hybrid Cucumber and Burpee Hybrid Zucchini—  
see Burpee's Blue List for wholesale prices—complete line  
of vegetable and flower seeds for Market Growers.

**W. ATLEE BURPEE CO.**

*Vegetable and Flower Seed Growers*

Clinton, Iowa

Philadelphia 32, Pa.

Riverside, Calif.

FEBRUARY, 1957





## SPECIAL STOCK CHARLESTON GRAY

Order No. 71

### FUTURE LEADER OF SHIPPING MELONS

This new development released by USDA Southeastern Vegetable Breeding Laboratory, Charleston, South Carolina, is resistant to sunburn as well as anthracnose and fusarium wilt.

The pale green rind with slightly darker intermingle veining reflects the sun rays and prevents sunburn. The superior heat reflecting quality of this melon results in a lower internal temperature during the ripening period which is believed to have a strong effect on the flavor and sweetness. The Charleston Gray grows to 50 lbs. on long bearing capacity of its fusarium wilt resistant vines. The flesh is extra-red, fine textured, sweet flavored and very firm. Seeds are brownish black. It is an excellent shipper because of the thin though hard rind. It is uniform in shape and relatively free of gourdnecks, maturing in approximately 90 days depending on weather.

¼ lb. 80¢      ½ lb. \$1.40      ¾ lb. \$2.05      1 lb. \$2.50

Certified Charleston Gray: \$3.00 per lb.

Special Stock Charleston Gray (in sealed bags) \$4.00 per lb.

Liberal Package—any variety 25c

All plus postage

**WILLHITE MELON SEED FARMS**  
WEATHERFORD, TEXAS

TELEPHONE: Weatherford 4-7519 (days) Poolville 4-6465 (nights)

## NEXT MONTH

ANOTHER AMERICAN VEGETABLE GROWER FIRST  
SPECIAL ISSUE ALL ABOUT TOMATOES

**GROW THE BEST!**

**HIGH QUALITY SEED STOCK**  
grown from foundation or approved seed

**FLORIDA OR GREENHOUSE TESTED!**

Thoroughly field inspected  
Properly stored Shipments  
inspected for grade by Federal  
and State Inspectors

**GROW TOP QUALITY**

**MINNESOTA**

**Certified SEED POTATOES**

**FOR HIGHEST YIELDS!**

Grown under rigid requirements and inspected by well trained, qualified inspectors of the State Department of Agriculture.

**MINNESOTA CERTIFIED SEED POTATOES ARE SOLD ONLY BY THE GROWERS.**

Select your variety—we supply the grower. List on request.

**See Your Local Dealer!**

**Look for this Official Blue Tag of Certification on every bag.**

**OFFICIAL TAG**  
Minnesota Certified Seed Potatoes  
This tag is a guarantee of the quality of the seed potatoes. It is a guarantee of the fact that the seed potatoes have been grown under rigid requirements and inspected by well trained, qualified inspectors of the State Department of Agriculture.

**STATE OF MINNESOTA DEPT. OF AGRICULTURE**  
Seed Potato Certification, U. of M. St. Paul Campus, Dept. P, St. Paul, Minn.

## WINTER WONDER

(Continued from page 11)

than do hotbeds or cold frames. Last spring Cornell students grew all types of vegetables and flowers in the experimental house.

Plastic greenhouses can be erected in the fall and used for fall crops of tomatoes or even flowers, followed by spring plants for field-setting. The plastic panels should be removed around the end of May to prevent sun damage to the plastic.

The design of the Cornell plastic-panel greenhouse is such that it can be made any length to suit growers' needs. The 4 x 4-inch posts were treated and sunk 3 feet in the soil.

The roof panels were constructed of 1½ x 2-inch pine. This provides a sturdy, lightweight panel that can be easily handled by one man. No. 10 screws 3 inches long were used to fasten the joints; corrugated fasteners, however, can be used in place of screws. Metal braces—two for each sash—were attached to keep the panel bars parallel. The panels were covered in a warm room—the plastic expands when it is warm, and when installed, the colder outside air causes it to shrink and tighten. There was no flapping of the plastic panels.

Similar panels were planned for the side walls, but time did not permit their construction in this experimental house. Plastic stretched over the sides served fairly well, but is not as satisfactory as panels because of the difficulty of getting it tight enough when applied outdoors.

Many bonding cements were tested in an attempt to find a perfect bond for each type of plastic. New materials are being released constantly, and many of them are under test at Ithaca. For this reason, recommendations will not be given for cements until trials are completed and results compared. Also, it is not absolutely necessary to use cement. Wood lath or plastic belting can be stapled or nailed over the plastic to secure it.

In constructing the panels for the Cornell house, the bonding cement was painted on the wood frame and the plastic applied to it. Because the cement is very sticky, it was difficult to get the plastic on smoothly and evenly. This problem was solved by thumbtacking the plastic to another panel and inverting it over a panel painted with the bonding compound. The tacks, which had been placed around the outer edges of the first panel, were then removed, and the plastic remained smoothly attached to the second panel.

One significant finding in this research was that two layers of plastic

AMERICAN VEGETABLE GROWER

## ORDER

(page 11)

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GETABLE GROWER

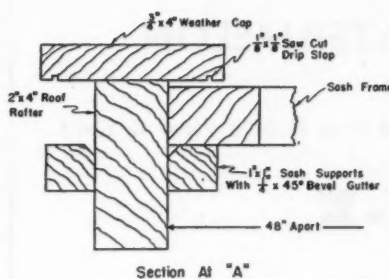
(one on the outside and one on the inside of the panel frame) had many advantages over a single layer. This provides a dead-air space between the two layers, which has a high insulation value. The inner surface of the double layers always felt much warmer than did that of the single layer.

Another advantage of the double layers is the lack of condensation. The single-layer panels are cold and the resulting moisture condensation on the plastic noticeably reduces light transmission. By actual measurement in the Cornell house more light came through the double layers than through the single.

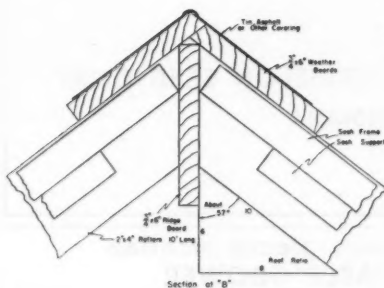
A successful plastic house can be built with either polyethylene or polyvinyl of .002, .003 or .004-inch thickness. In general, all of the polyethylene materials transmitted about the same amount of light. On a clear day, with an open-sky reading of 8400 foot-candles, approximately 7000 foot-candles came through, or about 83% transmission.

The polyvinyl material (.004 inch) gave 5800 foot-candles, or about 70%. (It should not be concluded that all polyvinyl is inferior to polyethylene in light transmission, because manufacturers are now producing polyvinyl

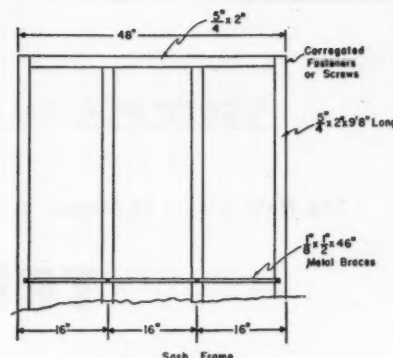
### DETAILED PLANS OF CORNELL UNIVERSITY'S PLASTIC-PANEL GREENHOUSE.



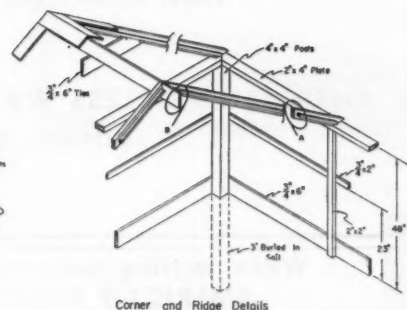
Section A-A



Section B-B



Sash Frame



Corner and Ridge Details

with as much clarity as glass. This is a report only on the materials used in these tests.) Cellulose triacetate films gave excellent light transmission

values but were too brittle and had no tear strength.

Heat can be any conventional type of heating unit.

THE END.



### 10 YEARS LIFE

is indicated by "Weatherometer" tests of Polyflex 230 by leading authorities.

### WHY WAIT?

Write, wire or telephone Long Branch 6-4600 for full details. Immediate delivery guaranteed.

## Amazing, they say!-

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Crystal Clear Greenhouse Plastic "Glass"

## YOU CAN BUILD YOUR OWN GREENHOUSE FOR LESS THAN 15% THE COST OF GLASS

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- Not Vinyl . . . not Polyethylene
- Highest transmission of light
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- Equals glass in holding earth radiation
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- Curbs damping off; holds fumigation
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X. S. SMITH—In charge of Florist Cloth Division

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Finest Scientifically Tested Hybrids

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GOSHEN, INDIANA

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"ASGROW"

Seeds of Proven Merit



Pepper, Yolo Wonder "A"

is a better strain

Try some—1/2 oz. 50c, oz. 90c  
1/4 lb. \$2.75, lb. \$9.00

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and top strains of standard sorts

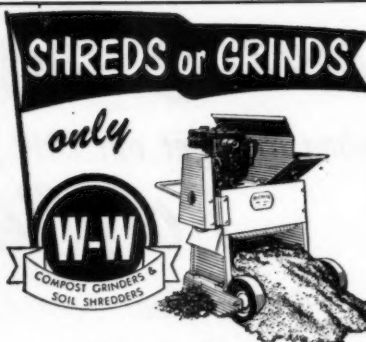
**Letherman's**

Dept. VG  
Canton 2, Ohio

### Certified Vegetable Plants

Certified Tomato, Pepper, Onion and  
Cabbage Plants. All leading varieties.  
We ship only in large quantities.

JOHN THORNHILL PLANT COMPANY  
Tifton, Georgia



### Does Both

The W-W Compost Grinder and Soil Shredder sets the standard for all others because it does everything. Shreds compost material, grinds, screens fine enough for potting soil and top dressing, mixes compost with soil or other fertilizer. Rejects only unwanted trash. It's the only machine with interchangeable rollers (for shredding) and grinding screen as standard equipment. No wonder it's America's largest seller!

Portable 2-XB model sells for \$133.50 less belt guard and engine; or \$189.50 complete with Briggs and Stratton 2 1/2 h.p. recoil starter engine (electric motor available) f.o.b. Wichita. Also larger models. Write for literature and name of user near you.

Terms usually arranged.

**W-W GRINDER CORP.**

Dept. VG

Wichita, Kansas

## STARTERS

(Continued from page 13)

mixture high in phosphorus and containing nitrogen and potash will produce a strong, quick-growing plant with firm tissues. These plants will withstand cold and adverse weather conditions much better than plants not receiving a good starter solution.

### Outstanding Mixtures

With these requirements in mind, several mixtures have been developed that make effective transplanting solutions. Mixtures that are easily prepared and that have given excellent results in several years' tests are:

1) Two parts monoammonium phosphate (Ammono-Phos A) and one part nitrate of potash. This mixture is completely soluble and contains 11% nitrogen, part of which is nitrate nitrogen and part ammonia nitrogen; 32% readily available phosphorus; and 14% potash.

2) Equal parts of monopotassium phosphate and diammonium phosphate. This completely soluble mixture contains 12 1/2% ammonia nitrogen, 52% phosphoric acid, and 17 1/2% potash.

3) Three parts of diammonium phosphate and one part of 60% muriate of potash. This inexpensive mixture contains 15% ammonium nitrogen, 40% phosphoric acid, and 15% potash. It is very effective in stimulating root growth.

There are many other prepared mixtures that are available commercially and that are satisfactory. Some of the prepared mixtures contain traces of minor elements and others do not. The writer has never found any benefit from minor elements in transplanting mixtures. Neither is there harm in them unless too much is used.

For convenience in the field, many manufacturers put up their transplanting mixtures in 3-pound packages which is the correct amount for 50 gallons of water.

Disappointments in results from starter solutions are frequently due to the use of too concentrated a transplanting solution. Some growers reason that if a little is good, then twice the concentration ought to be twice as good. But this is not true. Plants take up nutrients from the soil in very dilute concentrations, and an excessive concentration of soluble salts in the soil solution will injure or even kill the plant from plasmolysis.

Consequently, 3 pounds or at most 4 pounds of these high-analysis soluble mixtures per 50 gallons of

AMERICAN VEGETABLE GROWER



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(page 13)

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GETABLE GROWER

# FERTI- LIQUID

Trade Mark Reg.

Patent Pending

The All-Purpose Liquid Fertilizer  
Complete with Penetrating Agent—  
Trace Elements—Growth Stimulant

New, Advanced  
10-20-10 Formula—  
40% Nutrients

Produces TOP QUALITY vegetable  
—BIGGER, BETTER-TASTING

- Gets it to market sooner
- BIGGER YIELD per acre
- Non-corrosive — use safely with any type spray (tractor, jet, boom or aerial)...ties in with insecticidal, fungicidal, herbicidal spray programs for low cost application
- No mixing, dust or odor!

**\$1.85** per gal. in 55-gal. drums  
del'd

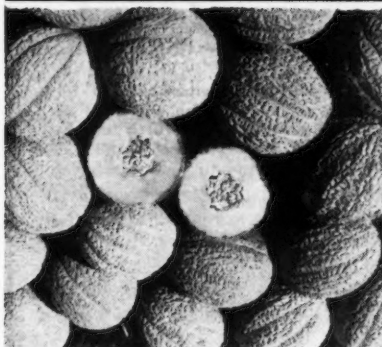
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# HARRIS SEEDS



## HARRIS' HARVEST QUEEN

Leading Market & Shipping Melon  
Bred for Resistance to Fusarium Wilt

Queen of Colorado type, earlier ripen-  
ing; better yielding.  
Extra thick, fine textured, firm flesh.  
Delicious, sweet musky flavor.  
Quality excellent for a week after pick-  
ing.  
Medium size, oval shape, just right for  
crating and shipping.

Write for MARKET GARDENERS'  
and FLORISTS' Wholesale Price List.

**JOSEPH HARRIS CO., INC.**

76 Moreton Farm

Rochester 11, N. Y.

FEBRUARY, 1957

water will give much better results  
than larger quantities. The average  
transplanting machine operating at  
normal speed will eject about a quar-

## PARTIAL LIST OF COMMERCIAL STARTER SOLUTIONS

Trade Name	Analysis	Source
<b>Group I—High-Phosphate Analysis</b>		
Take-Hold	10-52-17	Victor Chem. Works, 155 N. Wacker Dr., Chicago 6, Ill.
Armour's All-Soluble Plant Food	15-52-9	Armour Fertilizer Works, Hurt Bldg., Atlanta, Ga.
Start-Rite	10-52-8	Davison Chemical Co., Baltimore, Md.
Bonro	10-50-10	Swift & Co., Union Stock Yards, Chicago 9, Ill.

<b>Group II—Medium-Phosphate Analysis</b>		
Kap Co. #1	15-30-15	The Summers Fertilizer Co., Inc. McKeesport, Pa.
Plant Prod	15-30-15	Plant Products Corp., Kennedy Ave., Blue Point, L.I., N.Y.
Nu Way	15-30-15	Plant Food Co., Streator, Ill.
Dixco	15-30-15	Marion Chemical Co., Marion, Ohio
VHPF	6-25-15	Miller Chemical & Fertilizer Corp., 2226 N. Howard St., Baltimore, Md.
Instant Vigoro	20-10-15	Swift & Co., Union Stock Yards, Chicago 9, Ill.
Ferti-Liquid	10-20-10	Clover Chemical Co., Box 10865, Pittsburgh 36, Pa.

<b>Group III—Equal Nitrogen, Phosphorus, and Potassium Analysis</b>		
Folium	20-20-20	Monsanto Chem. Co., 1700 S. 2nd St., St. Louis 4, Mo.
Nurish	20-20-20	Naco Fertilizer Co., Findlay, Ohio
Gro-Stuff	20-20-20	American Chemical Paint Co., Ambler, Pa.
Kap Co. #3	20-20-20	Kelly Agricultural Products, McKeesport, Pa.
Nutri-Leaf	20-20-20	Miller Chemical & Fertilizer Corp., 2226 N. Howard St., Baltimore 18, Md.
Dupont Soluble Plant Food	19-22-16	E. I. du Pont de Nemours & Co., Wilmington 98, Del.
Ra-Pid-Gro	23-21-17	Ra-Pid-Gro Corp., P.O. Box 13, Dansville, N. Y.
Liqua-Leaf	10-10-8 (liquid)	Miller Chemical & Fertilizer Corp., 2226 N. Howard St., Baltimore 18, Md.

ter-pint of solution per plant. Ac-  
tually, it works out to about 30  
plants per gallon of solution.

In other words, if you were set-  
ting 3000 tomatoes per acre, you  
would need 100 gallons of water and  
6 pounds of starter mixture. If you  
were setting broccoli 1½ x 3 feet,  
or 9680 plants per acre, you would  
need 325 gallons and 19 pounds of  
transplanting mixture per acre. If  
you were setting cabbage 1 foot x  
3 feet, or 14,520 plants per acre, you  
would need about 500 gallons and  
30 pounds of starter mixture.

When used on crops such as  
melons grown in pots or dirt bands,  
the plants should be watered with  
starter solution just before trans-  
planting.

THE END.

... for the  
Best in  
**SOLUBLE**  
**FERTILIZERS**  
insist on ...

**MILLER**

**V H P F**

6-25-15 analysis with  
secondary elements and  
hormone.

**NUTRI-LEAF "60"**

20-20-20 analysis with trace  
elements and hormone (with  
special sticker and spreader  
added to increase its value as  
a foliar spray).

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10-10-8 analysis with  
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hormones.

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time proven and tested by many  
years of experience and usage by  
commercial growers.

- Give your plants a quick boost when  
transplanting. Spray your crops after  
planting in combination with your  
insecticide and fungicide program  
and produce crops with better qual-  
ity and bigger yields.

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tributor.

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**COMPLETE  
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Everything necessary to make tests for 15 plant growth factors; plus tissue tests for Nitrates, Phosphorus and Potassium.



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OUTFIT**

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Simplex Soil Test Outfits are not merely soil testers, they are combination Soil and Tissue Test Outfits based on scientific methods devised at Michigan State College by Dr. Charles H. Spurway.

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Best strains of leading varieties. Shipments catering to market gardeners' demands. Free price list.

**TEXAS PLANT FARMS**  
JACKSONVILLE, TEXAS



John Leonard, Cicero, Ind., exhibits basket of firm, meaty tomatoes that ripened after the first picking on section of his tomato field side-dressed with nitrogen solution.

**TWO TONS  
More an Acre**

Indiana grower boosts tomato yield with nitrogen side-dressing

By HARRY RANDELL

**L**AST summer, John Leonard, Cicero, Ind., while side-dressing corn with nitrogen solution, decided to test its effect on his 10-acre field of tomatoes.

The solution used was Nitrana, a low-pressure type containing 41% nitrogen. Leonard applied it on 2 acres in the center of his field at the rate of 30 pounds of actual nitrogen to the acre.

His only complaint at harvesttime was that he hadn't given the rest of the field the solution treatment.

Leonard had plowed down 600 pounds of 5-20-20 to the acre on the entire field, and put 100 pounds of 12-12-12 in the rows when the tomatoes were seeded.

Before the tomatoes were picked, Leonard says, the side-dressed section stood out in vivid contrast to the rest of the field. Vines were more lush and green, and the tomatoes far more numerous.

**No Delay in Ripening**

At the first picking, the yield for the entire field was 14½ tons to the acre. The section receiving the additional nitrogen, Leonard says, out-produced the rest of the field by at least 2 tons to the acre. There was no noticeable delay in ripening in this section.

The field produced an additional ton and a half to the acre at the sec-



**"SENECA PROLIFIC"  
HYBRID SUMMER  
SQUASH**

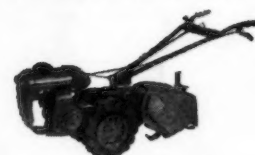
49 days. Seneca Prolific Hybrid is a true F1 hybrid developed by Robsons. This open growing, vigorous, erect bush type plant has all the desirable characteristics of the original Early Prolific type along with better yields, earlier fruiting, and excellent market appearance. Long, cylindrical, smooth straight fruits . . . uniformly creamy yellow in color.

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Quality Seed, Inc.  
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**NEW Ariens**  
**MULTIMATIC**

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See your dealer or write:

**Ariens**  
183 Calumet St.  
BRILLION, WIS.

AMERICAN VEGETABLE GROWER

ond picking. Because of the greater abundance of later ripening tomatoes, yield from the nitrogen-treated section was again much greater.

Leonard seeded approximately one-third of the field with the Baltimore



Leonard used an applicator similar to that shown above to apply nitrogen solution to 6-inch depth. Applicators are loaned on a "do-it-yourself" basis but solutions can be custom applied.

variety; the rest with Rutgers. Seeding was done the first and second Saturdays in May. Leonard side-dressed the 2-acre test strip late in June. THE END.

## GREENHOUSE

(Continued from page 30)

excess nitrates and increases the soil's capacity to hold other nutrients.

4) Do not fertilize until the situation is under control. In a Purdue University greenhouse that had a borderline soluble salts problem, nine crops of tomatoes were grown without any fertilizer additions and a corn cob mulch was worked in after each crop. The yields were as good or better at the end of the period, and the salt level was reduced below the danger point.

Nitrogen fertilization is in a class by itself. We do not want the same level of available nitrogen for all crops or at all stages of growth of a crop. In midwinter when the light is poor, a low nitrate content is desirable to promote fruit set.

The requirement is much higher in the spring when light conditions improve and two or three clusters of fruit have set. Therefore, it is important to maintain only a moderate level in the soil and then "feed the plant" by side-dressing as additional amounts are needed. The best way to determine when to side-dress with nitrogen is to watch the vigor of the new growth and make use of plant tissue tests for this nutrient.

Deficiencies of minor elements in vegetable greenhouses are extremely rare. If one is suspected, corrective measures should be tried on a small area first to see if there is any response. THE END.

FEBRUARY, 1957

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Get nitrogen grow-power for vegetables the fast, easy way with dependable ARCADIAN UREA 45—the concentrated 45% nitrogen fertilizer. You get 36 pounds of actual nitrogen in every 80-pound bag, all high-quality Urea nitrogen, leach-resistant, quick-acting and long-lasting. UREA 45 is a labor-saver and a money-maker any way you use it. Plow it down, side-dress it or apply it in irrigation water. UREA 45 feeds crops quickly and well, even when the soil is cold. It's 45% nitrogen—it leaves no harmful residue in the soil. See your dealer now—get ARCADIAN UREA 45 to make crop profits grow!

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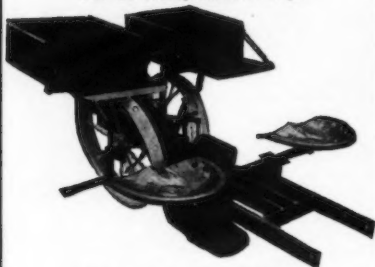
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AMERICAN VEGETABLE GROWER  
WILLOUGHBY, OHIO

### Burpeeana Lettuce Is Better than Bibb

NEW FOR 1957

PHILADELPHIA, PA.—David Burpee, head of the world's largest mail-order seed house, says their new market growers specialty lettuce is the result of many years of selection to produce a butterhead superior to Bibb, with added flavor and without undesirable traits. Burpeeana will produce heavier yield, higher quality, and is longer standing.

Shiny deep green with very slight bronze markings, saleable in about 75 days. Moderately crinkled or savoyed, always crisp and tender, superior very sweet flavor. Less subject to tipburn than most butterheads; leaves never bitter. Black-seeded. Growers wholesale prices: 1 oz. \$1.00; ¼ lb. \$3.00; 1 lb. \$9.00, postpaid. Don't miss Burpeeana profits this year! Order direct from W. Atlee Burpee Co.—Philadelphia 32, Pa. or Clinton, Iowa or Riverside, Calif.

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Fibre glass cab available for weather protection, also electric starter as optional equipment.

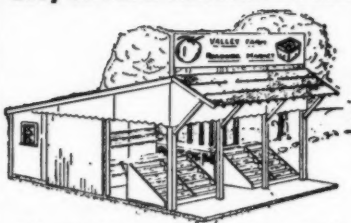
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matic Control

Is Being Used with  
Outstanding Results

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2417 Nicholasville Pike Lexington, Ky.



PAT. PENDING

## CENTRAL VALLEY

(Continued from page 43)

spring and the other in late summer.

Much of the spring crop is transplanted from plant beds in the fall. The mild winters allow this crop to grow slowly until the days lengthen in the spring when bulbing begins. Stockton Yellow Globe predominates for this crop. The late summer crop is usually seeded in late February, and is ready for harvest in July and August.

Favorite open-pollinated varieties are San Joaquin, Sweet Spanish, and Southport White Globe. Several new hybrids have been developed by the University of California, the USDA, and some seed companies, and have received wide acceptance. Sizable tonnages of these onions are dehydrated for many commercial uses.

**Celery**—The celery acreages have been dropping in the valley for a number of years. Formerly over 8000 acres per year were produced in the Delta, but competition from the coast counties and seeming buyer preference for that celery has cut the acreage by almost 75%. The Utah-type varieties predominate.

**Lima Beans**—Green lima beans for freezing have been increasing in importance in recent years. The main concentration of this crop is grown around Patterson in Stanislaus County. Concentrated Fordhook is the only variety grown.

**Sweet Corn**—Sweet corn is an important crop in Kern and Tulare counties. This crop is concentrated around Delano and Visalia. The long growing season enables two crops a year to be grown. The first is harvested in June and July, while the fall crop is marketed in October. These crops are timed so that they fill the gap in the market between Coachella Valley corn and that grown by market gardeners near the large cities of the West Coast. If the market warrants it, some corn is shipped as far east as Chicago. The "T" strain of Golden Cross Bantam is the favorite variety.

**Peas**—The acreage of peas is decreasing in the valley, but small acreages are still grown in Kern, Sacramento, and Yolo counties. Most of this acreage is for freezing, but sizable amounts are marketed fresh if prices are good. The Freezonian-type varieties predominate.

**Spinach**—Spinach for processing is increasing in importance in two counties. It is grown primarily around Patterson and Woodland. The increasing uncertainty of the Texas crop in some years has led processors to depend more and more

AMERICAN VEGETABLE GROWER

## ALLEY

(page 43)

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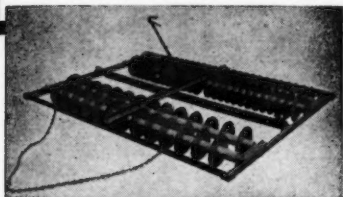
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Certified Seed Growers  
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on California spinach. This crop is seeded in late fall and harvested in April before hot weather causes bolting.

Viroflay has been the only variety grown until 1956 when Califlay was introduced by the University of California. The latter will assume much greater importance since it is darker green and resistant to downy mildew.

**Sweetpotatoes**—Important acreages of sweetpotatoes are grown near Merced, Stockton, and Visalia. Here again the lighter soils are utilized to obtain better root shape. Practically all of the crop is the Velvet strain of Porto Rico. They are marketed wholly on the West Coast, a market that could absorb more California potatoes since considerable quantities are imported from Texas and Louisiana.

**Lettuce**—California's lettuce crop is concentrated in the coastal valleys during the spring, summer, and fall months, but because of disease problems in this area increasing acreages are being grown in the valley in the early spring and late fall.

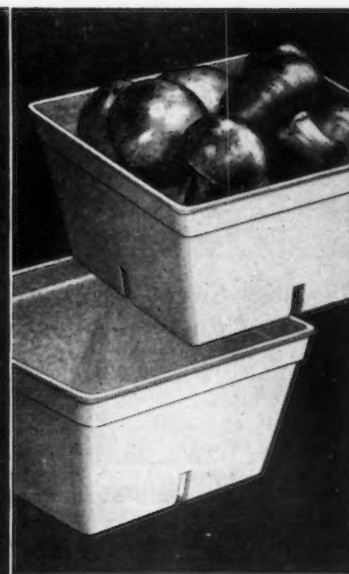
This production is concentrated near Delano in Kern County, and around Brentwood in Contra Costa County. These operations are carried on by the same growers operating on larger scales in other areas.

The farmers of this great valley face the same problems as other growers in the state. Spiraling land prices have risen above \$1000 per acre in some areas, and taxes frequently run as much as \$35 per acre per year. These high fixed costs necessitate keeping the land in some income crop practically all of the time, so that green manure or other soil improving crops are rarely grown. This is leading to a gradual loss of soil structure, and soil compaction is becoming a major problem.

The shortage of water for irrigation is becoming acute in some places. Much of the irrigation water comes from deep wells which draw water from deep gravel beds which underlie most of the Central Valley.

Attempts to recharge these gravel beds are made by pouring huge quantities of water from snow melts into artificial lakes to percolate down into the substrata. However, demand from other areas for the snow water is leaving less and less water for this purpose.

Huge areas of the western side of the southern San Joaquin Valley still remain largely desert. The lack of irrigation water prevents the reclamation of this land. One of the newer development plans entails the transportation of water in canals from the northern Sacramento River Valley 400 miles away. **THE END.**



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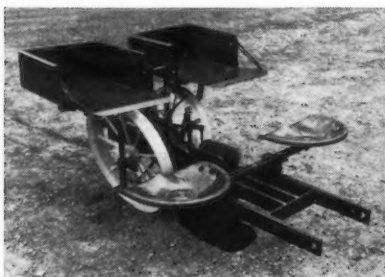






### Big-Juicy-Sweet

I thought you would like to know about a new melon which has returned greater profits to growers in the South and Southwest. Developed by the University of Arkansas, it resembles Charleston Gray. The flesh of the new melon, called White Hope, is a bright pink, fine-textured and tender. Sugar content runs about 5% higher than Black Diamond. White Hope is highly wilt-resistant and will grow to 40-pound size. Because it matures earlier than Charleston Gray, it fits well into any production or shipping program. Growers who have planted this new variety are increasing their plantings in 1957. You can buy seed or get full details by writing Willhite Melon Seed Farms, Weatherford, Texas.



### Automatic Transplanter

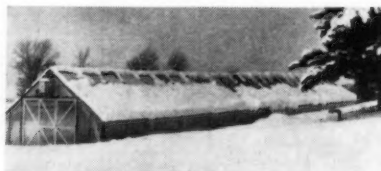
A new, exclusive planting wheel equipped with sturdy fingers that hold plants in a straight, upright position has proved itself in actual vegetable grower tests. Good-sized plant boxes have a hinged end that makes a convenient table for the droppers who only move their hands a few inches to place the plant in the cup-shaped finger. The planting wheel is equipped with bronze bearings and the new unit has adjustable hitch bar so that pressure on the wheels can be varied. Why not write Mr. Ellis at D. R. Ellis Mfg. Co., Verona, Wis., for the facts.

### Kills Weeds, Nematodes

A new, safe chemical is available for control of weeds and soil-borne insects and diseases. One application of the new chemical prior to planting controls various grasses, broad-leaf weeds, nematodes, insects, and fungi. Called Chem-Vape, the chemical has

## New for You

a low toxicity to warm-blooded animals, and has performed excellently on cauliflower, cabbage, eggplant, lettuce, and in fact most vegetable and berry crops. It is available in liquid form, and you can get full details by writing A. M. Livingston, Chemical Insecticide Corporation, 129 Montague St., Brooklyn 1, N. Y.



### Cheaper Than Glass

In central New York state an 18-inch snow failed to damage a plastic greenhouse. Grower tests with plastic greenhouses clearly demonstrate that they will withstand snow, wind, or rain. Neither the additional weight, the cold, nor the moisture from melting snow produced any serious effect on the film. Profit-minded growers are finding the wonder film, polyethylene, ideal for greenhouse vegetable growing. Why not get the latest information on plastic greenhouses; it's easy—just write Bakelite Company, 30 E. 42nd St., New York 17, N.Y.

### NEW PRESIDENT

The nationally known vegetable seed house of F. H. Woodruff & Sons Inc., Milford, Conn., recently elected Daniel A. Johnson, Jr., president. Mr. Johnson succeeds Harold F. Woodruff, who became chairman of the board.

A former school principal, Mr. Johnson joined the Woodruff company in 1947. He was named treasurer in 1954, a position he will continue to hold.

Harold Woodruff, a son of the founder of the 56-year-old company, became a partner in the firm in 1906 and assumed the presidency in 1945. He is a former president of the American Seed Trade Association.



### How to Palletize

Several growers have learned a great deal and cut their costs substantially by reading the booklet above. The folder demonstrates many ways to handle vegetables more economically when harvesting, handling, storing, and shipping. Every grower should have this free booklet, and you can get your copy by writing Bob Ornberg, General Box Co., 1825 Miner St., Des Plaines, Ill.



### Rugged Precision Seeder

A new Flexi-Planter unit-type drill embodying great accuracy in depth and spacing is now available. The new planter is self-driven and clamps easily onto any square tool bar. The new planter has been tested in the vegetable industry and does a superior job. Rows can be spaced as narrow as 13 inches. The special hoppers are equipped with stainless steel tubes to make seed fall freely and accurately. The hopper is just 12 inches above the furrow. Each unit floats on a parallel linkage to insure even planting on uneven ground. The new planter is equipped with seed quantity gauge and a pointer showing depth settings. In actual tests the new seeder does a superior job. John Deere, Moline, Ill., will be glad to send you all of the facts.



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**FOR SALE—COMPLETE IRRIGATION SYSTEM,** used one season. 1950' 8" Armco Steel Pipe for underground main. 1470' 4" x 30" McDowell coupled aluminum pipe. Sprinklers, risers, hydrants and necessary fittings. Gorham-Rupp Jeep Pump @ 500 GPM, trailer mounted. Ideal outfit for large grower. Write for price and additional information. Priced to sell. WILLIAM A. BERDINE, Belpre, Ohio.

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**AMAZING NEW HYBRID EVERBEARING** strawberry "Ozark Beauty". Large fine flavor. Very productive. Originator WINN'S BERRY FARM, Westfork, Arkansas.

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**STRAWBERRY PLANTS—ARKANSAS** certified, virus free, disease free, Green Tag Blakemore plants, \$5.00 per 1,000. Twenty other leading varieties \$6.00 per 1,000. UNVERRICHT & SCOTT, Augusta, Arkansas.

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**PEACH TREES, LEADING VARIETIES.** New land grown, fine fibrous root systems. True to name and priced right. SECOR'S NURSERY, Rt. 20, Perry, Ohio.

**RASPBERRY AND STRAWBERRY PLANTS.** Heavy fibrous roots, none better. Let us prove that quality pays. Red, Black, Purple Raspberries. NEW DURHAM EVERBEARING RASPBERRY. SECOR'S NURSERY, Rt. 20, Perry, Ohio.

**FOUNDATION SEBAGO AND CHEROKEE,** also Certified Sebago Seed Potatoes. NORTH-MICH SEED FARM, Elmira, Mich.

## Holmes Seeds

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Noted for the best cauliflower on the market for midsummer as well as fall crops. Cuts practically 100% perfect heads. Excellent leaf protection and matures over a short period. ¼ oz. 90c; oz. \$3.00; ¼ lb. \$10.00; 1 lb. \$35.00.

### HOLMES EARLIEST HYBRID SWEET CORN

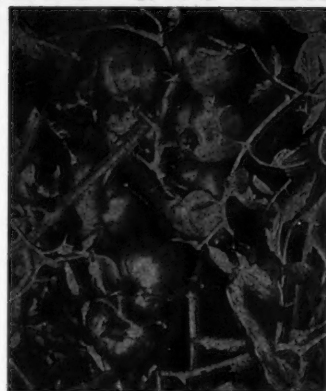
An early high quality sweet corn, producing large well-filled ears, with excellent spring vigor. Bright yellow kernels appealing to the eye.

5 lb. \$3.20; 15 lb. \$5.80; 25 lb. or more \$2c per lb.

Write for our Market Growers and Florist Wholesale Catalog.

**Holmes Seed Company**  
1017 Ninth St. S.W.  
CANTON, OHIO

## MIDWEST SEED GROWERS



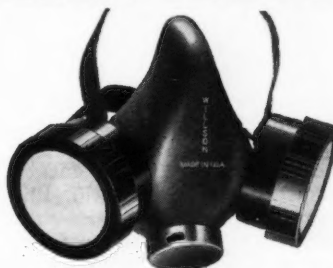
### Tomato SHAWNEE HYBRID

Truly the finest F2 hybrid on the market today. This is not only our opinion but also of every grower who has used it. It has everything: vigor, earliness and maintains its wonderful quality and size throughout the entire packing season. Even in localities where the weather was unfavorable, this tomato proved outstanding. Fruits are globe shaped, solid and meaty and they color to an even, rich red. Vines bushy, spreading, giving good foliage cover. Highly prolific. Matures along with Valiant. Be sure to include in this year's plantings.

¼ Oz. \$2.50 ¼ Oz. \$4.50  
½ Oz. \$8.00 1 Oz. \$15.00

**WRITE for our free market gardeners and florists price list.**  
**MIDWEST SEED GROWERS**  
Dept. V-27, 505 Walnut; Kansas City, Mo.

## SPRAY SAFELY!



### WILLSON AGRI-TOX RESPIRATOR

**USDA accepted protection** against Systox, Parathion, TEPP, Aldrin, Chlordane, etc.

Spray safely with Willson Agri-Tox, the universal respirator for handling and applying toxic farm chemicals. Write for bulletin, prices and name of your nearest distributor.

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## KEEPING YOUTH INTERESTED

**W**HATEVER our occupation, profession, or trade, we older people have the responsibility of keeping our youth interested in what we are doing. This thought was again impressed upon our minds as we journeyed to Atlanta to attend the convention of the National Junior Vegetable Growers Association. It's true that young people will find a way to express themselves, usually constructively too, but we can share with them some of our experiences and maybe make their road a little less bumpy.

Our hats are off to such dynamic leaders as Grant B. Snyder, founder and director of the NJVGA, and to other horticulturists throughout the country who are helping in this educational program for young vegetable growers. We feel there can be no limit placed on the education of our young people, it's so great. The program sponsored and carried out by NJVGA is a part of that education.

Not only do these young people learn how to grow vegetable crops, but how to best market them and then how to use them properly in the diet. They are applying technological developments to a dynamic business and getting results. In addition to this phase of education, the boys and girls are acquiring some of the skills and refinements of leadership. They learn how to get along and work with others. They master public performance and public speaking. They are presented with a challenge, then rise to meet it.

As we watched President Jack Armstrong of Springfield, Ill., perform at the business session and again at the big annual banquet, we had visions that some day here might be a president of the Vegetable Growers Association of America, or an outstanding leader in any number of our organizations.

We would like to quote here the Challenge as stated in the 1956 program of activities and projects of the NJVGA.

"There is definite need for sound and progressive leadership, the use of intelligent production and marketing methods, plus the effective and economic use of these crops and crop products. The many tangents of this industry (horticulture) need the vigor of youth not only to carry on the present scope of its operations, but more particularly to develop improved

methods and techniques so that we may more effectively utilize our resources to the benefits and well-being of all our people.

"It is, therefore, important that we encourage young people, our boys and girls, to intelligently evaluate the vocational and professional opportunities in several fields of horticulture, if we are to develop the leaders, the skilled operators, the effective distributors and the intelligent consumers that will be needed if this industry is to maintain its proper place in our national economy."

## Know Your pH

**I**N the good old days our limited knowledge of soil chemistry found us referring to a soil as being strongly acid, moderately acid, weakly acid, or neutral. As a result of our inadequate method of soil testing, we frequently applied too much lime to correct what was believed to be an acid soil condition, or we used lime when it was not needed at all.

Developments brought us then to the use, in soil testing, of the chemist's pH scale for indicating a particular degree of acidity. This is the scale used today to determine how acid a soil is.

The scale of pH numbers runs from about zero to approximately 14. The neutral point of the pH scale is 7. A pH value greater than 7 is said to be alkaline; below 7, acid.

Although we are concerned primarily with soils, the pH system of describing the strength of acids also

applies to any material of which water is the chief component. A condensed report in *Your Farm* listing the pH values of some familiar watery solutions helps us to form some idea of the meaning of these numbers.

## QUOTE-OF-THE-MONTH

"Rich soils are often to be weeded."  
—Francis Bacon

By way of illustration, they report, we can begin with a familiar acid, for example, muriatic acid. This material is a typical strong acid; it is powerful enough to dissolve limestone and is very corrosive to human skin. It has a pH value in the neighborhood of zero.

Going up the pH scale, we may take lemon juice as an example of a somewhat weaker acid with a pH of about 2. Proceeding to even weaker acids, the pH value of tomato juice is likely to be about 4.

Absolutely pure water, free of any acid whatever, has a pH value of exactly 7. A pH of 7, therefore, represents the neutral point of the pH scale, since water is neither an acid nor an alkali.

Some materials have the ability to destroy acids and are said to be alkaline. The presence of such an alkali is indicated by a pH value greater than 7. For example, a very weak alkali like agricultural limestone, may give a pH of about 8 when in contact with water and air. A very powerful alkali, such as ordinary lye, may have a pH value near 14, the approximate upper limit of the pH scale.

When we apply the pH scale to soils we find that very few of them are more acid than pH 4. A slightly acid condition in the soil is desirable for most crops, and many cultivated soils are found to have pH values between 5.5 and 6.5.

## VEGETABLE CONVENTION



"Who says it's warmer inside!"

## Coming Next Month

### Tomato Issue.

- Growing Staked Tomatoes in New England
- Florida Capitalizes on Vine-ripened Tomatoes
- How to Grow Tomatoes for the Green-wrap Trade
- The Kind of Tomato California Cannery Want
- Getting Early Maturity—to Beat the Market
- Staking and Stringing Tomato Trellises Mechanically
- How Top Tomato Growers Get Top Yields

AMERICAN VEGETABLE GROWER



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Growers Get Top

VEGETABLE GROWER



## OLIVER SUPER 88 POWER *keeps you ahead*

Here's *more* power to help you do more when everything is *right*—ground, weather, crop. You put higher quality produce on the market ahead of time—do better on price, profit *more*.

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...100% diesel...factory-built LP-gas.

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\*With adjustable front-axle model.

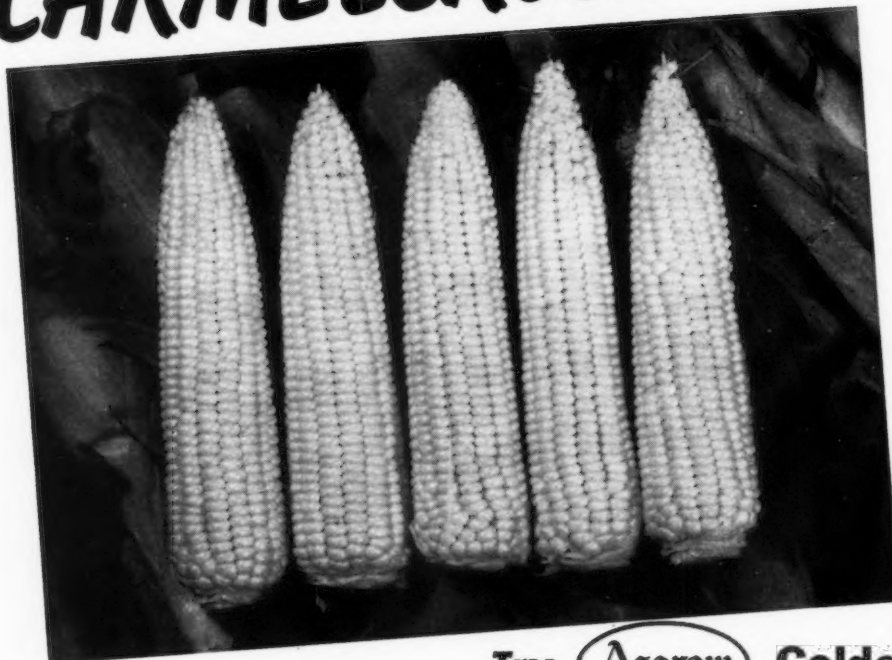


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